APPENDIX 2.2-1

Biological Resources Report

DRAFT

Biological Resources Report
for the
Jacumba Solar Energy Project
Major Use Permit PDS2014-MUP-14-041
Environmental Review Project Number
PDS2014-ER-14-22-001
Jacumba, San Diego County, California

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APPENDICES

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GLOSSARY OF TERMS AND ACRONYMS

% cc	percent cloud cover
°F	degrees Fahrenheit
AC	alternating current
ACOE	U.S. Army Corps of Engineers
amsl	above mean sea level
APLIC	Avian Power Line Interaction Committee
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMP	best management practice
CALFIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CRPR	California Rare Plant Rank
DC	direct current
DG	disintegrated granite
ECMSCP	East County Multiple Species Conservation Program
ECO	East County
ESA	federal Endangered Species Act
FCA	Focused Conservation Area
GIS	geographic information system
GPS	Global Positioning System
I-8	Interstate 8
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
MW	megawatt
NBMMRP	Nesting Bird Management, Monitoring, and Reporting Plan
NCCP	Natural Communities Conservation Plan
NESC	National Electrical Safety Code
OHWM	ordinary high water mark

PCA	pest control adviser
PCS	plant control system
PDS	Planning and Development Services
RMP	Resource Management Plan
RPO	Resource Protection Ordinance
RPW	relatively permanent water
RWQCB	Regional Water Quality Control Board
SCADA	supervisory control and data acquisition
SDG&E	San Diego Gas & Electric
SDRFPD	San Diego Rural Fire Protection District
SSC	Species of Special Concern
TNW	traditional navigable water of the United States
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
WL	Watch List

SUMMARY

The proposed Jacumba Solar Energy Project (Proposed Project) is composed of ~~two~~ three major components: (1) the development of the Jacumba Solar Energy site; ~~and~~ (2) construction of a new approximately 1,500-foot-long 138-kilovolt (kV) generation-tie transmission line required to connect the energy system to the existing San Diego Gas & Electric East County Substation; and (3) an approximately 184-acre Open Space Preserve. The Proposed Project property encompasses a total of approximately 304 acres in unincorporated San Diego County approximately 3 miles to the east of the community of Jacumba Hot Springs.

Vegetation mapping of the approximately 304-acre study area was conducted by Dudek biologists between December 2012 and February 2013. A formal jurisdictional delineation was conducted by Dudek for the study area in February 2013. Vegetation mapping and formal jurisdictional delineations were conducted for the gen-tie alignment in fall 2014. Based on recent drought conditions, focused botanical surveys were not conducted for the solar site or gen-tie alignment. Instead a habitat suitability model was conducted to determine potential of special-status species to occur on the Project site.

Focused surveys for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*) were conducted in the spring of 2013 on the solar and gen-tie alignment sites. Wintering raptor surveys were conducted in December 2013 and January 2014. Nesting raptor and foraging surveys were conducted in May, June, and July 2014. A burrowing owl habitat assessment and surveys was conducted between March and July 2014. This report documents the results of Dudek's field work as well as an analysis of the impacts related to the Proposed Project.

Based on a jurisdictional delineation, there are approximately 3.3 acres (24,361 linear feet) of non-wetland jurisdictional waters under the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. No wetlands were found to occur within the study area. In addition, no National Hydrographic Database stream/rivers were found to cross into the gen-tie survey area.

Suitable Habitat Model analysis resulted in the determination that three special-status plant species have a high potential to occur in the Project area including: Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), Tecate tarplant (*Deinandra floribunda*), and desert beauty (*Linanthus bellus*). Suitable habitat acreages occurring on site include 217.7 acres for Jacumba milk-vetch and 186.9 acres for Tecate tarplant and desert beauty. An additional 11 species have a moderate potential to occur within the Proposed Project area

Habitat assessments for the following wildlife species were conducted within the 304-acre Proposed Project site in 2013 and 2014: Quino checkerspot butterfly, burrowing owl (*Athene cunicularia*), golden eagle (*Aquila chrysaetos*), prairie falcon (*Falco mexicanus*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), turkey vulture (*Cathartes aura*), and red-shouldered hawk (*Buteo lineatus*).

There will be direct impacts to a total of 108.1 acres of vegetation communities on the solar site, which includes permanent direct impacts to 99.9 acres of special-status upland vegetation communities. For the gen-tie alignment, there will be a total of 3.4 acres of direct impacts, which includes permanent direct impacts to 3.4 acres of special-status upland vegetation communities as a result from vegetation removal and pole establishment to install the gen-tie alignment.

There are significant impacts as a result of potential direct and indirect effects to special-status plants, special-status wildlife species, special-status vegetation communities, and jurisdictional resources. In addition, there are significant impacts as a result of potential direct effects to foraging or breeding habitat, wildlife movement for small animals, and the Migratory Bird Treaty Act. Mitigation measures for each of these impacts are included and reduce the significant impacts to a level of less than significant. Mitigation measures include the conservation of 180.4 acres of vegetation communities, and mitigation for special-status plants and habitat for special-status wildlife species. Impacts to wildlife movement for large animals, and to local policies, ordinances and adopted plans would be less than significant with implementation of the Proposed Project.

1 INTRODUCTION

1.1 Purpose of the Report

This biological resources report provides the following items: (1) describe the existing conditions of biological resources within the Project site in terms of vegetation, jurisdictional resources, flora, wildlife, and wildlife habitats; (2) discuss potential impacts to biological resources that would result from development of the property and describe those impacts in terms of biological significance in view of federal, state, and local laws and policies; and (3) recommend mitigation measures for potential impacts to special-status biological resources, if necessary. Recommendations will follow federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA), the County of San Diego's (County's) *Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources* (County of San Diego 2010a), and the County's Resource Protection Ordinance (RPO) (County of San Diego 2007).

1.2 Project Location and Description

The proposed Jacumba Solar Energy Project (Proposed Project) is composed of three major components: (1) development of the approximately 108-acre Jacumba Solar Energy site; (2) construction of a new, approximately 1,500-foot-long 138-kilovolt (kV) generation-tie transmission line (gen-tie alignment site) required to connect the energy system to the existing East County (ECO) Substation; and (3) an approximately 184-acre Open Space Preserve. The Proposed Project properties encompass a total of approximately 304 acres within the Mountain Empire Subregional Plan area of the County's General Plan (County of San Diego 2011), in unincorporated San Diego County (Figure 1, Regional Map). The Proposed Project, including the gen-tie, would be located entirely on private lands. The Jacumba Solar Energy site is situated south of Old Highway 80 and immediately north of the U.S./Mexico border in eastern San Diego County, California, approximately 3 miles to the east of the community of Jacumba Hot Springs (Figure 2, Vicinity Map). The approximately 1,500-foot 138 kV gen-tie line would travel from the Proposed Project site to the San Diego Gas & Electric (SDG&E) ECO Substation. The gen-tie line would be situated on approximately three utility poles between the Jacumba Solar Energy site and the ECO Substation. Regional access to the Proposed Project area is provided directly by Old Highway 80 and also by Interstate 8 (I-8), running east and west farther to the north. The approximately 304-acre study area is situated within the following Assessor's Parcel Numbers: 661-080-01, 661-080-04, 661-080-05, 661-080-08, 661-041-02, 661-041-03, and 661-041-04.The surrounding Jacumba area, which includes the community of Jacumba Hot Springs, can be characterized as a high desert rural landscape featuring large lots with single-family homes and row crop agricultural operations that have been conducted in the recent past. Much public

agency land (Bureau of Land Management (BLM), State Parks) is present in the area and offers recreational opportunities such as hiking and off-road driving (see Figure 3, Regional Context). South of I-8, major infrastructure elements of the landscape include the Sunrise Powerlink and the Southwest Powerlink, which are a pair of 500 kV electric transmission lines supported by 150-foot-tall steel lattice structures; several large, vertical, metallic communication towers located at the White Star Communication Facility; and the linear, rust-colored U.S./Mexico International border fence (located immediately south of the Proposed Project site).

The solar component of the Proposed Project would use photovoltaic (PV) fixed-tilt rack electric generation system technology to produce solar energy at the utility scale. The Proposed Project could produce up to 20 megawatts (MW) of solar energy and would be located on approximately 108 acres. A battery energy storage facility would also be constructed within the solar site capable of storing approximately 10 MW of energy.

Jacumba Solar Energy Project

The Proposed Project would produce up to 20 MW of alternating current (AC) generating capacity and would consist of approximately 81,108 PV modules fitted on 2,253 fixed-tilt rack panels. In addition to the panels and direct current (DC) to AC conversion equipment (i.e., inverter and transformer units), Jacumba Solar would include the following primary components:

- A 1,000-volt to 1,500-volt DC underground collection system and a 34.5 kV underground AC collection system linking the inverters to the on-site Project substation
- An on-site collector substation located on an approximately 23,650-square-foot (110-foot by 215-foot) pad
- A 138 kV overhead transmission line (gen-tie) would connect the Project substation to the ECO Substation (approximately 1,500 feet)
- An approximately 10 MW battery energy storage system that would be located on an approximately 21,600-square-foot (135-foot by 160-foot) pad adjacent to the collector substation

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FIGURE 1

Regional Map

Jacumba Solar Project

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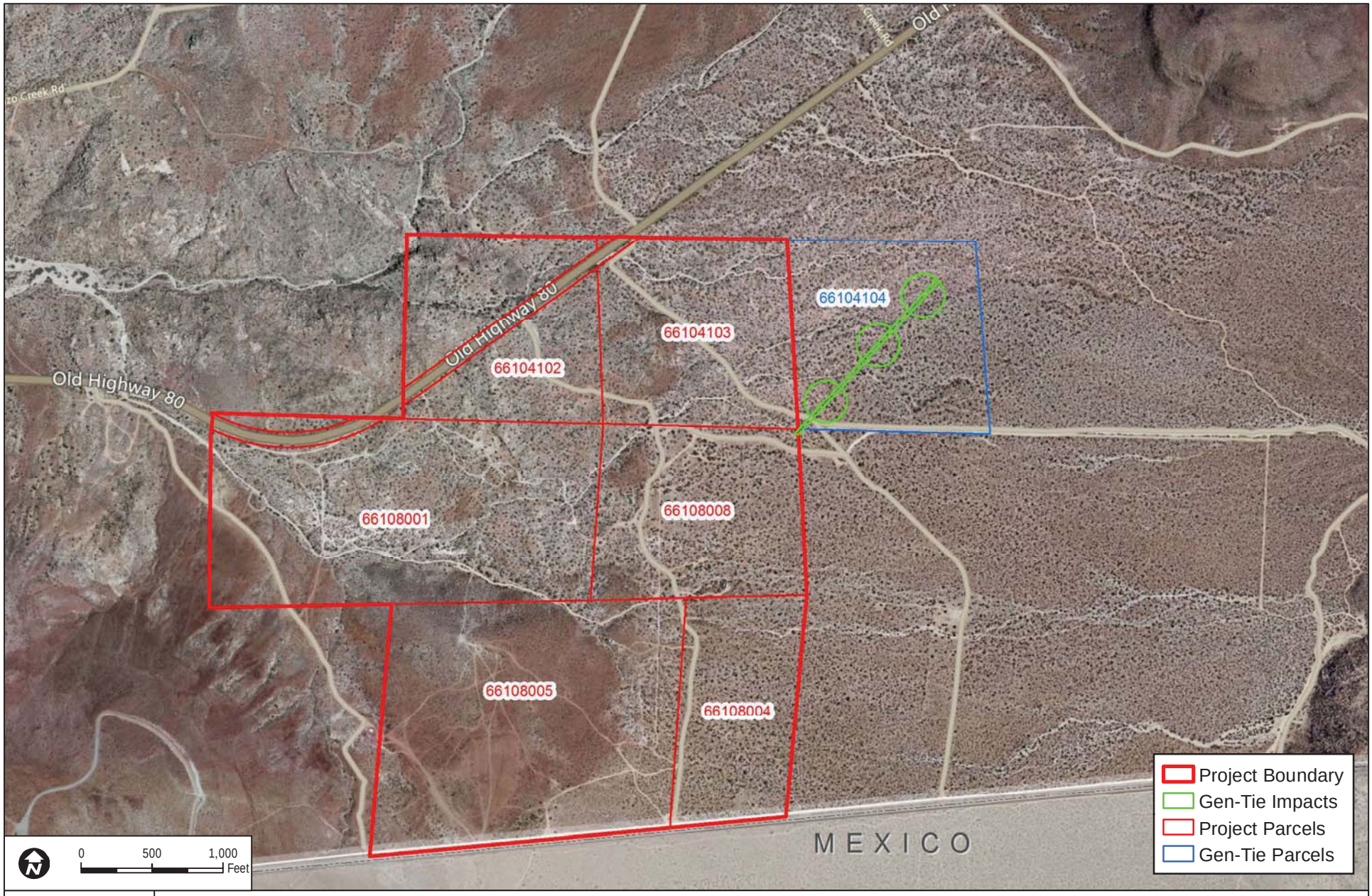

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SOURCE: SanGIS 2014; Bing Maps

FIGURE 2

Vicinity Map

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Jacumba Solar Project

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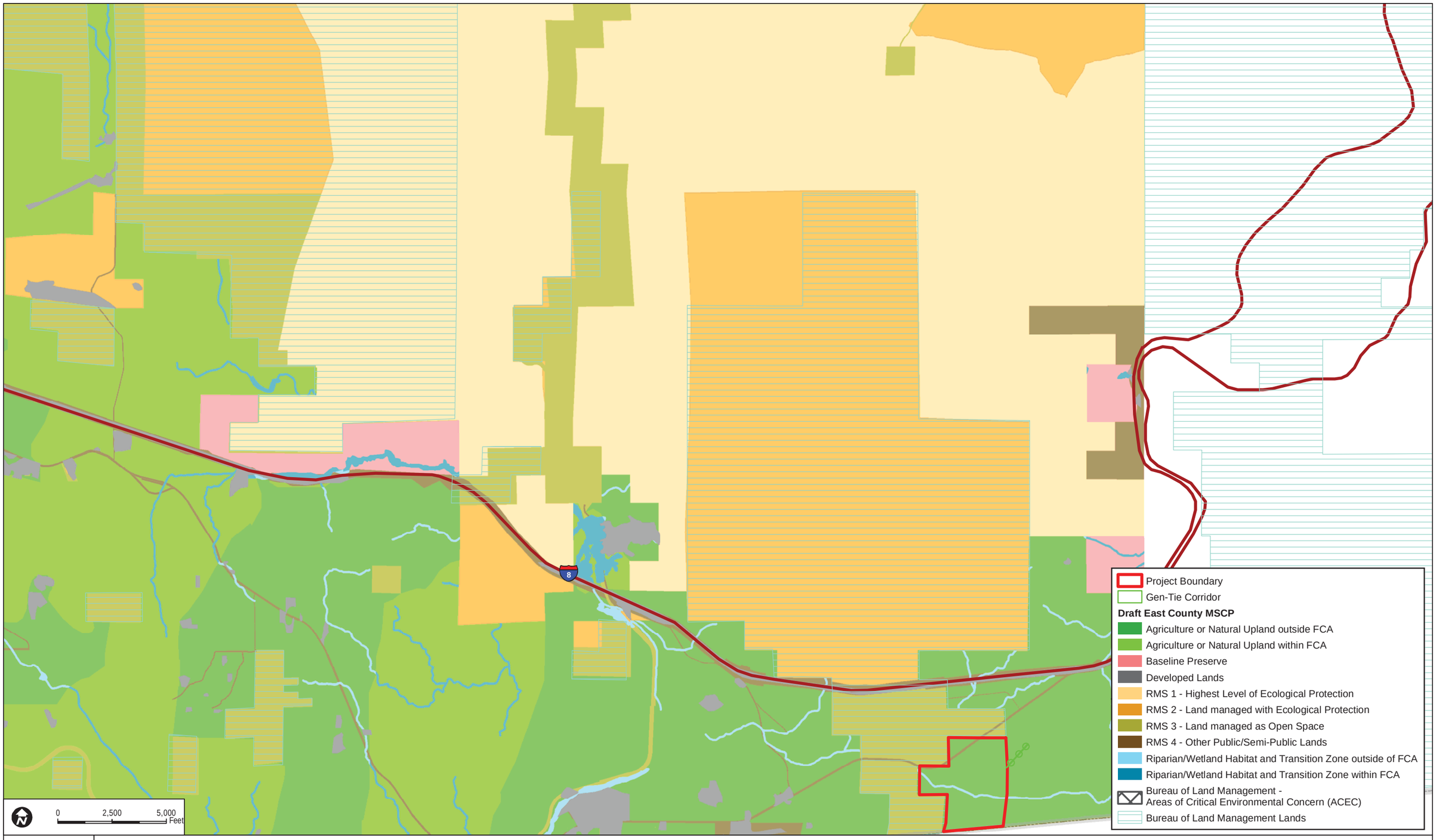

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SOURCE: SanGIS 2014, B M 2010

FIGURE 3

Regional Context

Jacumba Solar Project

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The Jacumba Solar substation and gen-tie interconnection facilities would be sized to accommodate the full 20 MW. The Proposed Project would be located entirely on private lands within unincorporated San Diego County, including the gen-tie. Upon completion, Jacumba Solar would be monitored off site through a supervisory control and data acquisition (SCADA) system.

Primary access to the Jacumba Solar site would be provided via an improved access road from Old Highway 80. The access road was recently constructed as part of the SDG&E ECO Substation project. Two additional points of emergency egress/ingress would be provided at the project's southwestern point and northeastern point to facilitate U.S. Customs and Border Protection access and to provide an alternate fire access point, respectively.

Power from the on-site collector substation would be delivered to the 138 kV bus at the adjacent SDG&E ECO Substation via an approximately 1,500-foot 138 kV transmission line within a 125-foot private right of way (ROW). The Jacumba Solar gen-tie line would extend overhead directly east from the on-site substation to the ECO Substation. A transition pole would be constructed at the interconnection point at the ECO Substation.

Project Components and Facilities

This section describes Project components, construction, operation, and decommissioning activities. The anticipated construction and operational water usage of the solar facility is also discussed in this section.

Modules

The Project would include installation of individual fixed-tilt-mounted PV modules that would comprise the majority of the proposed facilities. PV modules generate electricity by safely converting the energy of the Sun's photons into DC electrons. PV modules can be wired in series and/or parallel to obtain a required nominal voltage. The PV modules are interconnected and arranged to increase overall reliability.

The majority of PV module manufacturers advertise that they have been stringently tested and are robustly constructed to guarantee a useful life of 25 to 30 years in adverse weather conditions. The PV modules are uniformly dark in color, coated, and designed to be highly absorptive of all light that strikes their glass surfaces. The PV modules deployed for use in the project would comply with all industry standard quality testing. The PV modules would be electrically connected to the grounding system of the facility in accordance with local codes and regulations. The final PV module selection would be determined at the detailed engineering phase.

Support Structures

Racking refers to the support structure to which the solar PV modules are affixed that allows them to be properly positioned for maximum capture of the sun's solar energy. The PV module arrays (a row of PV modules) would be a fixed-tilt system that would be oriented along an east to west axis. The mounting structures are typically mounted on metal pipe pile or beam foundations 4 to 6 inches in diameter. The beams would be driven into the soil using a pile/vibratory/rotary driving technique similar to that used to install freeway guardrails. Driven pier foundations offer multiple benefits, including quick installation and minimal site disturbance, and are a "concrete-free" foundation solution that would allow for easy site reclamation at the end of the project life cycle. Most foundations would be driven to approximate depths of 10 to 15 feet deep. The PV modules, at their highest point, would be approximately 8 feet above the ground surface.

Depending on final engineering, the arrays may be equal in length, creating a uniform rectangular project footprint, or may vary in length to avoid sensitive resources and work with site terrain. The east to west arranged fixed-tilt arrays, if used, would be constructed approximately 25 feet apart (centerline to centerline) in a north to south direction, with an east–west array spacing of approximately 12.5 feet. Each PV module array row would measure approximately 144 feet in total combined length and approximately 6.5 feet in width. The PV module arrays' final elevations from ground would be determined during detailed project design; however, it is common to maintain as low an elevation profile as possible to reduce potential wind loads on the PV module arrays.

Inverters, Transformers, and Associated Equipment

PV modules would be electrically connected to adjacent modules to form module "strings" using wiring attached to the support structures. PV module strings would be electrically connected to each other via underground wiring. Wire depths would be in accordance with local, state, and federal codes. String wiring terminates at PV module array combiner boxes, which are lockable electrical boxes mounted on an array's support structure. Output wires from combiner boxes would be routed along an underground trench system approximately 3.5 feet deep and 1 foot wide, including trench and disturbed area, to the inverters and transformers.

Inverters are a key component of solar PV power-generating facilities because they convert the DC generated by the PV module array into AC that is compatible for use with the transmission network. The inverters within the electrical enclosures would convert the DC power to AC power and the medium-voltage transformers would step up the voltage to collection-level voltage (34.5 kV).

The inverters, medium-voltage transformers, and other electrical equipment are proposed to be located on skids located throughout the Project site. These power conversion stations would be either shop fabricated as one unit, or field assembled on site. The inverter and medium-voltage transformer units would be mounted on concrete foundation pads or concrete piers depending on local soil conditions. All electrical equipment would be either outdoor rated or mounted within enclosures designed specifically for outdoor installation. The proposed equipment poses no electrical shock risk and is safe to touch.

Project Substation

The Proposed Project requires the use of an on-site collector substation (110 feet by 215 feet (23,650 square feet)) that would be located on the northeastern corner of the project site. The purpose of the substation is to collect the power received from the collector lines and convert the voltage from 34.5 kV to 138 kV as well as to be able to isolate equipment (1) in the event of an electrical short-circuit, or (2) for maintenance.

The major components of the on-site substation are as follows:

- One 138 kV transformer including secondary containment area per local and state regulations.
- One 138 kV circuit breakers used to protect equipment from an electrical short circuit on the gen-tie. The circuit breaker consists of disconnect switches, wire, cables, and aluminum bus work used to connect and isolate the major pieces of equipment.
- The substation also includes a single 34.5 kV circuit breaker used to protect equipment from an electrical short circuit on the collection system, disconnects and bus work to connect and isolate the collector circuits, relays used to detect short circuits, equipment controls, telemetering equipment used to provide system control and data acquisition, voice communication, and the meters used to measure electrical power generated from the Project. Switching gear and other components would be a maximum of 35 feet in height.
- A 138 kV dead-end structure, with a maximum height of 35 feet, where the power output from each transformer is delivered to the gen-tie line.

Energy Storage System

A battery energy storage system is proposed to be located adjacent to the on-site substation in the northeast section of the Proposed Project site. The enclosures are similar to shipping containers and are approximately 45 feet long by 9 feet high by 8 feet wide. The battery storage system would consist of approximately 10 enclosures equipped with batteries capable of delivering

approximately 10 MW of AC energy. Each enclosure would include an air conditioning unit for cooling purposes and a self-extinguishing fire system. Critical information from the system would be monitored along with the solar plant performance. A master control system would coordinate operation of the solar generation equipment and the energy storage system.

Connector Line, Fiber-Optic Line, and Point of Interconnection

The project would interconnect to the ECO Substation project, which is owned and operated by SDG&E. A 138 kV line interconnecting from the ECO Substation project to the Jacumba Solar Energy Project would be constructed above grade. The length of the interconnecting, or "gen-tie," line would be approximately 1,500 feet.

The 138 kV interconnection line would consist of ~~two or~~approximately three overhead steel poles that would be up to 150 feet in height. The vertical distance between the cross-arms on the steel case riser would be 20 feet. Non-specular conductors would be installed along the interconnection line alignment to minimize the reflectivity and general visibility of new facilities. The distance between the ground and the lowest conductor would be at least 30 feet, and the distance between conductors would be 18 feet horizontally and 12 feet vertically. Although span lengths between poles would be dependent on terrain, lengths would generally be between 400 and 800 feet. Components used to construct the proposed 138 kV transmission line would all feature nonreflective surfaces. For instance, the insulators would be constructed of gray polymer, the conductors would be made from aluminum-wrapped steel, and the transmission poles and associated hardware would be composed of galvanized steel.

Each pole pad would require an approximately 20-foot by 20-foot permanent impact area (<0.01 acre) and an approximately 100-foot by 100-foot temporary impact area (0.23 acre per pole pad) that could be used as an equipment laydown area during construction.

Control System

Operation of the solar facility would require monitoring through a SCADA system. The SCADA system would be used to provide critical operating information (e.g., power production, equipment status and alarms, and meteorological information) to the power purchaser, project owners and investors, grid operator, and project operations teams, as well as to facilitate production forecasting and other reporting requirements for project stakeholders. The project would also have a local overall plant control system (PCS) that provides monitoring of the solar field as well as control of the balance of facility systems. The microprocessor-based PCS would provide control, monitoring, alarm, and data storage functions for plant systems as well as communication with the Project's SCADA system. Redundant capability would be provided for

critical PCS components so that no single component failure would cause a plant outage. All field instruments and controls would be hard-wired to local electrical panels. Local panels would be hard-wired to the plant PCS. Wireless technology would be considered as a potential alternative during final Project design. The SCADA system would be monitored remotely, and no on-site operations and maintenance facilities or personnel would be necessary.

Site Design

Security

The Project site would be fenced along the entire facility boundary for security with fencing that meets National Electrical Safety Code (NESC) requirements for protective arrangements in electric supply stations. Fencing would be 9 feet in height, with an 8-foot-tall chain-link perimeter fence with 1 foot of three strands of barbed wire along the top with a 4-inch maximum clearance from the ground surface. The fence would be constructed with anti-climbing material(s) such as extra small link size for the fence mesh. Signage in Spanish and English for electrical safety would be placed along the perimeter of the Project site, warning the public of the high voltage and the need to keep out. Signage would also be placed within the Project site where appropriate. Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system may be required during construction and/or operation. Remote-monitored cameras and alarm system(s), and perimeter and safety lighting that would be used only on an as-needed basis for emergencies, protection against security breach, or unscheduled maintenance and trouble-shooting (such as may occasionally be required) would be installed.

Maintenance and Security Lighting

Lighting would be designed to provide security lighting and general nighttime lighting for operations and maintenance personnel that may be required from time to time. Lighting would be shielded and directed downward to minimize any effects to the surrounding area, and would be used only on an as-needed basis. Lighting would be provided at the entrance gates, and the project substation.

The on-site substation would include lighting inside the substation to allow for safety inspections or maintenance that may be required during the evening hours. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, lights would only be turned on if needed.

All lighting for the solar facility would have bulbs that do not exceed 100 watts, and all lights would be shielded, directed downward, and would comply with the County of San Diego Light Pollution Code Section 59.101 et seq.

Access Roads

The Proposed Project would include dual purpose fire access roads and service roads. All road surfaces would have a permeable nontoxic soil binding agent to reduce fugitive dust and erosion in accordance with County Code Section 87.428, Dust Control Measures, and with San Diego Air Pollution Control District Rule 55, which regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions. In addition, the primary access driveway would be approximately 35 feet wide and provided off the existing paved ECO Substation driveway.

Fire Access Roads: The interior site roads would be constructed as suitable for fire access roads and would be constructed to a minimum width of approximately 24 feet on the perimeter and approximately 20 feet between panel blocks. The roads would be designed and maintained to provide all-weather driving capabilities and support the imposed loads of fire apparatus (not less than 50,000 pounds). The purpose of the fire access roads is to allow for one-way access of fire apparatus throughout the Project sites to reach all of the inverter stations.

The non-load-bearing surface material of the fire access roads would consist of an all-weather surface capable of supporting 50,000 pounds as required by County Fire Code. Fire access roads would be oriented in a north–south direction and would have east–west connections. An access-controlled gate would be installed at the substation driveways, which would be constructed off existing roadways with direct access to the project site.

Service Roads: Service roads inside the fence would be constructed to a width of approximately 24 feet on the perimeter and approximately 20 feet between panel blocks and would be compacted to support washing equipment loads of 15,000 pounds. An approximate 20-foot-wide road outside the fence would be constructed within the 125-foot gen-tie ROW to service the 138 kV gen-tie line during construction and operations. Service roads would be treated with a nontoxic soil binding agent to control dust.

Fire Protection

There are several fire stations that are owned and staffed by San Diego County Fire Authority, California Department of Forestry and Fire Protection (CAL FIRE), San Diego Rural Fire Protection District (SDRFPD), and U.S. Forest Service within the Proposed Project area. The Jacumba Hot Springs area is serviced by the SDRFPD's Jacumba Fire Station (Station 43).

Fire emergencies that may occur at the Proposed Project site would be primarily responded to by SDRFPD's Jacumba Fire Station (Fire Station No. 88), which is volunteer-staffed. Additional response from the closest staffed fire station would be available from SDRFPD's Lake Morena Fire Station. Other fire protection aid would come from the CAL FIRE Campo Station, as well as from mutual aid resources from throughout the County and state, when necessary. To comply with the fire code, clearing and grubbing, as necessary, in localized areas would be required for construction and access to the project site. Consistent with County requirements for discretionary approvals for projects in wildland–urban interface areas, a Fire Protection Plan (Dudek 2014a) has been prepared for the Proposed Project. Fire prevention measures include the following:

- Constructing all on-site facilities of non-combustible or ignition-resistant materials in accordance with County Building Code
- ~~One~~ Two 10,000-gallon water storage tank with fire department connections would be available
- Identifying roads and structures to comply with County Consolidated Fire Code, Section 505
- An illuminated sign at the Project entrances that clearly indicates inverter and electrical grid layout and entire site de-energizing disconnect switch identification and location
- Clearing of all existing native vegetation to a height no taller than 6 inches and removal of all dead, dying, and dried (low fuel moisture) vegetation
- 24-hour surveillance at the facility
- A fuel treatment perimeter area ensuring safe and effective emergency response to the site should a fire occur

Project Construction, Operation, and Decommissioning Activities

Construction Activities and Methods

The construction of the solar facility would consist of several phases, including site preparation (described below), development of staging areas and site access roads, solar array assembly and installation, and construction of electrical transmission facilities.

Site Preparation and Grading

Clearing and Grading: Construction of the Proposed Project would involve clearing and grubbing of the existing vegetation; grading necessary for the construction of access and service roads and the installation of solar arrays; trenching for the electrical DC and AC collection

system including the telecommunication lines; installation of the inverter stations; construction of underground 34.5 kV collection systems leading to the project substation; and construction of the project substation, energy storage facility, and the gen-tie line from the project substation to the adjacent ECO Substation. Major Grading Permits would be required, and would be obtained once grading quantities are finalized. Grading is expected to be balanced on site.

Collection System Trenching: Trenching requirements for the DC and AC electrical collection system and telecommunication lines would consist of a trench up to approximately 3 to 4 feet deep and 1 to 2 feet wide. The trenches may be filled with sand or another inert material to provide insulation and heat dissipation for the direct buried cable within the collection system. The topsoil from trench excavation would be set aside before the trench is backfilled and would ultimately comprise the uppermost layer of the trench. Excess material from the foundation and trench excavations would be used for site leveling.

PV System Construction Overview: Project construction would include several phases occurring simultaneously with the construction of: (1) PV systems assembly consisting of pile driving of support racks and the placement of panels on support racks, (2) trenching and installation of the DC and AC collection system; (3) point of interconnection upgrades; and (4) the grading of access roads.

Soil Stabilization: To reduce fugitive dust and erosion, the disturbed areas on the project site would either be treated in one of the following methods, or a combination of both: Treatment with a permeable nontoxic soil binding agent (preferred method), and/or placement of disintegrated granite (DG) or other base material (good for roads).

Construction Personnel, Traffic, and Equipment

The number of workers expected on the site during construction would vary over the construction period and is expected to average up to approximately 120 each day, generating about 120 daily round trips, with a maximum of 140 trips a day during the most intense phase of construction (i.e., the approximately 6 weeks of grading). Deliveries of equipment and supplies to the site would also vary over the construction period but are expected to average about 5 to 7 daily trips.

It is assumed that all employees would arrive within the morning peak hour and depart within the evening peak hour, and delivery truck trips would be distributed evenly throughout a 12-hour-shift day, between the hours of 7 a.m. and 7 p.m. Since the surrounding area is rural, traffic is very low on the local roads surrounding the project site. Implementation of the Proposed Project would result in a temporary increase in traffic along these roads, but not to the level of the road carrying capacity. No road closures are anticipated during project construction. A County-

required Traffic Control Plan to provide safe and efficient traffic flow in the area and on the project site would be prepared prior to construction. The Traffic Control Plan would be prepared in consultation with the County of San Diego and would contain project-specific measures for noticing, signage, policy guidelines, and the limitation of lane closures to off-peak hours (although it is noted that no requirement for lane closures has been identified).

During the peak of construction, a typical day would include the transportation of parts, movement of heavy equipment, and transportation of materials.

Operational Activities and Methods

The project would be an unmanned facility that would be monitored remotely. Appropriate levels of security lighting would be installed at the Project entrance. The site would be secured 24 hours per day by remote security services with motion-detection cameras.

Underground Collection System. The underground portion of the cable systems would be inspected and repaired if and when problems occur.

Generation Tie-Line. The 138 kV transmission line interconnecting the Proposed Project to ECO Substation would be inspected periodically for damage and repairs made as needed.

Electrical Substation and Energy Storage Facility. During operation, operations and maintenance staff would visit the Project substation and energy storage facility periodically for switching and other operation activities. Maintenance trucks would be used to perform routine maintenance, including but not limited to equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventative maintenance.

Solar Field. The solar panels, racking systems, inverters, transformers, and other electrical components would be inspected periodically. Electrical components would be tested routinely according to manufacturer's recommendations. In the event that remote monitoring indicates a problem, such as low performance, in a section of the solar field a crew would investigate and correct the problem on an as needed basis. Approximately twice a year, if needed, the solar panels would be washed using a water truck and purified water. In addition, the on-site meteorological stations would be cleaned and adjusted on a regular basis.

Decommissioning Activities and Methods

The Jacumba Solar facility would operate, at a minimum, for the life of its long-term Power Purchasing Agreement (PPA). The initial term of the PPA for the solar facilities is for 20 years, with additional terms anticipated. The lifespan of the solar facility equipment is estimated to be 30 years. Due to the establishment of the project infrastructure (both physical and contractual),

the continued operation of Jacumba Solar beyond the initial PPA term is very likely. At the end of the useful life, two alternative scenarios are possible: (1) re-tool the technology and contract to sell energy to a customer; (2) if no other buyer of the energy emerges, the solar plant can be decommissioned and dismantled.

Decommissioning and Recycling

Decommissioning would first involve removing the panels for sale into a secondary solar PV panel market or recycling. The majority of the components of the solar installation are made of materials that can be readily recycled because the panels' components can be broken down. If the panels can no longer be used in a solar array, the aluminum can be resold, and the glass can be recycled. Other components of the solar installation, such as the rack structures and mechanical assemblies, can be recycled as they are made from galvanized steel. Equipment such as inverters, transformers, and switchgear can be either reused or their components recycled. The equipment pads are made from concrete which can be crushed and recycled. Underground conduit and wire can be removed by uncovering trenches and backfilling when done. The electrical wiring is made from copper and/or aluminum and can be reused or recycled as well.

Dismantling

Dismantling the solar facility would entail disassembly of the solar facilities and substantive restoration of the site. Impacts associated with closure and decommissioning of the Project site would be temporary and would involve the following steps to dismantle the site and return it back to a conforming use:

1. The aboveground (detachable) equipment and structures would be disassembled and removed from the site. Detachable elements include all panels, inverters, transformers, and associated controllers and transformers. Removal of the aboveground conductors on the transmission line would also be implemented. Most of these materials can be recycled or reclaimed. Remaining materials would be limited and would be contained and disposed of off site, consistent with the County of San Diego Construction Demolition and Debris Management Plan (County Ordinance 68.508-68.518).
2. Underground collector and transmission components would be removed and recycled.
3. The use of the land would have to return to a use that is consistent with the County of San Diego Zoning Ordinance at the time of dismantling. The current zoning for the site is General Rural (S92), which allows for the following use types that are permitted pursuant to Section 2922 and 2923 of the County Zoning Ordinance: Residential, Family Residential, Essential Services, Fire and Law Enforcement Services, Agricultural Uses, Animal Sales and Services, Recycling Collection Facility, and Green Recycling.

4. If a new use is not proposed, the decommissioning would include removal of all ground-level components and preparing the site with a soil stabilization agent, such as a nontoxic permeable soil binding agent, or reseeded with native species. These activities would be consistent with current zoning General Rural (S92) or future applicable zoning.

Removal Surety

The final decommissioning plan(s) that would be provided prior to issuance of the building permits for the Project would comply with Section 6952.b.3(d) of the County of San Diego Zoning Ordinance for removal surety as follows:

> The operator shall provide a security in the form and amount determined by the Director to ensure removal of the Solar Energy System (security would be required for each of the constructed projects). The security shall be provided to the County prior to building permit issuance. Once the Solar Energy System has been removed from the property pursuant to a demolition permit to the satisfaction of the Director, the security may be released to the operator of the Solar Energy System (County of San Diego 2012a).

Financial responsibility for decommissioning would be an obligation of the owner of the solar facility. There are several options to consider, but a suitable method would be for a specific amount of funding (the decommissioning fund) to be set aside by the final year of Project operation in an amount equal to the estimated cost of decommissioning (the decommissioning cost), less the salvage value for equipment to be decommissioned and the proceeds from sale of the property once decommissioning is complete. Ideally, the cost of decommissioning should equal the amount of money gained from the scrap value and land value of the individual solar facilities. If additional funds are needed, they would be provided by the owner(s) of the solar facility and deposited into a dedicated account. Funds would be provided in an amount that would enable the sum of the decommissioning fund, salvage value, and land sale proceeds to cover the cost of decommissioning.

Water Usage

The following discussion includes an estimate of the amount of water that would be needed for the Proposed Project during the construction and site preparation, ongoing panel washing, and the decommissioning and dismantling. The solar facility would use water from the following sources: Jacumba Community Service District (non-potable (brackish) water not distributed by the district) and Padre Dam Municipal Water District (non-potable (reclaimed) water not distributed by the district).

Construction and Application of Soil Binding Agents

During construction, water would be used to suppress fugitive dust during grubbing, clearing, grading, trenching, and soil compaction and to apply a nontoxic soil binding agent to help with soil stabilization during construction. Water would also be used to mix concrete to be used for the substation, gen-tie line, and energy storage facility foundations.

Operation and Maintenance Potable Usage

Water would be used for washing the solar modules and for reapplication of the nontoxic permeable soils stabilizers as follows.

Soil Binding Agent Application. It is anticipated that the soil stabilizer chosen for the Proposed Project would need to be reapplied annually for at least the first several years. The Proposed Project would use a soil binding stabilization agent that is nontoxic and permeable. The purpose of the soil stabilizer is to prevent erosion and to reduce fugitive dust. To reapply the soil stabilizer agent would require approximately 3,300 gallons of water per acre, each year for the first several years.

Solar Module Washing. It is anticipated that in-place PV panel washing would occur twice a year during evening or nighttime hours, between sunset and sunrise. Washing of the panels would be undertaken using wash trucks. It is assumed that two trucks with two personnel per truck would be required. Approximately 800,000 gallons of water per year would be used. Potential impacts associated with module washing are described under "Altered Hydrology" in Section 2.2.2.2, and are included in the impacts analysis in Sections 3 through 5.

Decommissioning and Dismantling

It is estimated that the amount of water necessary to decommission and dismantle the Proposed Project would be less than that required for construction, because there would be no need to use water for concrete mixing or to hydrate and compact on-site fills.

1.3 Survey Methodologies

1.3.1 Literature Review

Special-status biological resources present or potentially present on site were identified through an extensive literature search using the following sources: U.S. Fish and Wildlife Service (USFWS) (2014), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2014a), California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants* (CNPS 2014), San Diego Plant Atlas

(SDNHM 2014a), San Diego Bird Atlas (SDNHM 2014b), and survey results for the ECO transmission line project (CPUC and BLM 2011; RBC 2009a, 2009b, 2010). The literature review also included review of the list of plant species proposed for coverage under the draft ECMSCP Subarea Plan (County of San Diego 2009).

General information regarding wildlife species present in the region was obtained from Unitt (2004) for birds, Bond (1977) for mammals, Stebbins (2003) for reptiles and amphibians, and Emmel and Emmel (1973) for butterflies. The *Soil Survey, San Diego Area, California Part 1* (Bowman 1973) also was reviewed to identify potentially occurring special-status plants based upon known soil associations. Native plant community classifications used in this report follow *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) as modified by the County and noted in *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008).

The County Department of Planning and Development Services (PDS) issued a review (scoping letter) for this Project that on August 7, 2014, identified target sensitive biological resources present or potentially present on site (County of San Diego 2014a). In terms of regional preserve planning efforts, the Proposed Project is located within the County of San Diego. Therefore, the County RPO (County of San Diego 2007) and guidelines (County of San Diego 2010a, 2010b) were consulted to ensure consistency with local conservation efforts, goals, and policies. The Proposed Project would not preclude or prevent the preparation of the subregional Natural Communities Conservation Plan (NCCP) because the Project is designed in accordance with the Preliminary Conservation Objectives outlined in the Planning Agreement for ECMSCP (County of San Diego 2008). These objectives and Project applicability/compliance are provided in Section 7.

1.3.2 Field Reconnaissance

Between December 2012 and September 2014, Dudek conducted vegetation mapping, wintering raptor surveys, nesting raptor and foraging surveys, jurisdictional delineations, and burrowing owl habitat assessments for the Proposed Project site. Between March and April 2013 focused surveys were conducted on the Proposed Project site for Quino checkerspot butterfly (*Euphydryas editha quino*). Tables 1 and 2 list the dates, conditions, and survey focus for each survey performed. Jurisdictional delineation and vegetation mapping were then completed in September 2014 for the gen-tie alignment.

All field surveys were completed according to County Requirements and included directed searches and habitat assessments for the County list of potential special-status faunal and floral species. The entire Project site was surveyed by personnel qualified to perform biological surveys. Special-status biological resources were mapped and analyzed together with the Project plans (MUP Code 3300-12-010).

Per the scoping letter, dated August 7, 2014 (County of San Diego 2014a), focused surveys or wildlife habitat assessments were required for the following wildlife species, where appropriate: golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), osprey (*Pandion haliaetus*), and Quino checkerspot butterfly. The winter raptor survey/assessment was conducted in December 2013 and January 2014. Nesting raptor and foraging surveys were conducted between May through July 2014. The Quino checkerspot butterfly surveys were conducted in March and April 2013. Burrowing owl surveys were conducted between March and July 2014.

The County's scoping letter for the Proposed Project also identified plant species that require focused surveys (County of San Diego 2012b). However, focused surveys for special-status plants were not conducted in 2013 for the reasons described in Section 1.3.4.1.

Table 1
Schedule of Surveys for the Jacumba Solar and Gen-Tie Alignment Sites

Date	Time	Focus	Conditions	Personnel
12/5/12	08:30–16:30	Vegetation Mapping	0% cc, 62°F–78°F, 0–4 mph winds	CJF
1/11/13	09:00–16:00	Vegetation Mapping (Juniper Woodland Mapping)	30% cc, 47°F–55°F, 0–2 mph winds	CJF, MP
2/18/13	08:30–16:30	Vegetation Mapping (Juniper Woodland Mapping)	0%–30% cc, 55°F, 2–4 mph winds	CJF, MP
2/18/13	08:30–16:30	Jurisdictional Delineation	0%–30% cc, 55°F, 2–4 mph winds	CJF, PCS
2/21/13	09:00–15:00	Vegetation Mapping (Juniper Woodland Mapping)	0%–10% cc, 47°F–55°F, 0–3 mph winds	CJF, MP
12/1/13	08:10–13:00	Wintering Raptor Surveys	80%–100% cc, 40°F–60°F, 3–4 mph winds	BAO
12/23/13	08:30–13:30	Wintering Raptor Surveys	50%–100% cc, 50°F–61°F, 5–10 mph winds	BAO
1/3/14	07:30–12:30	Wintering Raptor Surveys	30%–100% cc, 35°F–65°F, 0–5 mph winds	BAO
1/18/14	08:00–13:00	Wintering Raptor Surveys	0%–100% cc, 38°F–67°F, 5–10 mph winds	BAO
3/27/14	07:35–15:50	Burrowing Owl Habitat Assessment and Survey	20%–100% cc, 59°F–69°F, 3–10 mph winds	SG, MP
5/8/14	06:10–09:00	Burrowing Owl Survey	90%–100% cc, 50°F–55°F, 0–3 mph winds	BAO
5/8/14	09:00–14:00	Nesting Raptor and Foraging Surveys	40%–90% cc, 55°F–71°F, 3–5 mph winds	BAO
6/1/14	05:50–08:30	Burrowing Owl Survey	50% cc, 60°F–62°F, 3 mph winds	BAO
6/1/14	08:30–13:30	Nesting Raptor and Foraging Surveys	0%–50% cc, 62°F–88°F, 0–3 mph winds	BAO
7/6/14	06:40–09:40	Burrowing Owl Survey	20%–30% cc, 64°F–80°F, 3–5 mph winds	BAO

Table 1
Schedule of Surveys for the Jacumba Solar and Gen-Tie Alignment Sites

Date	Time	Focus	Conditions	Personnel
7/6/14	09:40–15:00	Nesting Raptor and Foraging Surveys	0%–20% cc, 80°F–95°F, 3–5 mph winds	BAO
9/19/14	09:45–14:30	Vegetation Mapping (Juniper Woodland Mapping) and Jurisdictional Delineation	0% cc, 75°F–82°F, 0–5 mph winds	CJF, MP

Notes: SG = Scott Gressard; MP = Marshall Paymard; CJF = Callie Ford; PCS = Patricia Schuyler; BAO = Brock A. Ortega.
% cc = percent cloud cover; °F = degrees Fahrenheit; mph = miles per hour.
Jurisdictional Delineations and Vegetation Mapping have not been conducted for the gen-tie alignment site. These occurred during summer/fall 2014 for the gen-tie alignment site.

Table 2
Schedule of Focused Quino Checkerspot Surveys for the Jacumba Solar and Gen-Tie Alignment Sites

Survey Area	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Cloud Cover (% cc)*	*Wind (mph)*	
Week 1						
1	3/14/13	09:45–15:05	69–78	0–0	6–8 to 4–6	KJM
2	3/14/13	11:00–17:00	79–80	0–0	5–8 to 0–2	TLW
3	3/18/13	09:05–13:00	70–86	30–30	0–1	AMH, CJF, PCS
4	3/18/13	13:00–17:00	86–84	5–50	0–5 to 2–6; gusts to 8	AMH, CJF, PCS
Week 2						
1	3/25/13	09:30–15:00	68–72	0–10	2–6 to 6–8	KJM
2	3/21/13	09:30–15:30	60–70	30–0	3–6 to 3–6	TLW
3	3/25/13	09:20–14:30	66–78	0–0	0–2 to 6–8	TLW
4	3/21/13	10:45–16:10	61–71	70–70	4–5 to 3–5	BAO
Week 3						
1	3/29/13	09:30–14:50	66–80	10–80	0–2 to 4–6	TLW
2	3/29/13	10:30–16:20	70–73	100–80	3–5; gusts to 10	BAO
3	4/3/13	08:30–14:15	70–81	0–0	0–2 to 3–4	TLW
4	4/2/13	10:00–16:00	64–82	0–0	2–4 to 3–5	VRJ, SKV
Week 4						
1	4/5/13	09:00–16:00	60–78	10–0	3–5 to 5–10; gusts to 10	BAO
2	4/4/13	08:30–14:30	70–80	80–90	0–1 to 3–8; gusts to 10	JDP
3	*	N/A	N/A	N/A	N/A	N/A
4	4/4/13	10:00–15:00	76–76	80–50	5–3 to 3–9, gusts to 10	KJM, SKV, JMW

Table 2
Schedule of Focused Quino Checkerspot Surveys for the Jacumba Solar and Gen-Tie Alignment Sites

Survey Area	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Cloud Cover (% cc)*	*Wind (mph)*	
Week 5						
1	*	N/A	N/A	N/A	N/A	N/A
2	*	N/A	N/A	N/A	N/A	N/A
3	4/11/13	08:30–16:30	60–74	0–0	1–5; gusts to 10	BAO
4	4/11/13	08:45–14:45	75–82	5–0	2–6 to 8–12, gusts to 12–20	JDP
Week 6						
1	4/1913	12:00–16:00	72–75	0–0	4–8 to 4–8	AMH, CJF, PCS
2	4/19/13	08:10–12:00	63–72	0–0	4–8 to 4–8, gusts to 11	AMH, CJF, PCS
3	4/17/13	08:30–14:15	64–73	0–0	0–3 to 1–4; gusts to 7–12	PML

Notes: AMH = Anita M. Hayworth, PhD (TE-781084-6); BAO = Brock A. Ortega (TE-813545-5); JDP = Jeffrey D. Priest (TE-840619-2); KJM = Kamarul J. Muri (TE-051250-0); PML = Paul M. Lemons (TE-051248-4); VRJ = Vipul R. Joshi (TE-019949-0); PCS = Patricia C. Schuyler; CJF = Callie J. Ford; SKV = Shane Valiere; TLW = Tricia L. Wotipka; JMW = Jonathan M. Walker
°F = degrees Fahrenheit; % cc = percent cloud cover; mph = miles per hour; * = survey not conducted due to adverse weather conditions; N/A = not applicable.

1.3.3 Resource Mapping

Vegetation communities and land uses on and within 100 feet of the site were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet), aerial photograph-based field map of the Project site. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Consistent with the latest County of San Diego *Report Format and Content Requirements: Biological Resources* (County of San Diego 2010b), vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), where feasible, with modifications to accommodate the lack of conformity of the observed communities to those of Holland (1986) or Oberbauer et al. (2008).

Juniper Woodland Mapping Methods

Biologists conducted vegetation mapping using the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), which is a local (i.e., San Diego County) refinement of the

Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). *The Manual of California Vegetation* (2nd edition) (Sawyer et al. 2009) was used as an additional reference to help determine characteristics (such as percentage species cover) of various classifications.

On January 11 and February 18 and 21, 2013, and September 19, 2014, Dudek biologists Callie Ford and Marshall Paymard mapped each individual California juniper (*Juniperus californica*) within 25 one-acre plots within the Project boundary and gen-tie alignment to determine the percent cover of California juniper (*Juniperus californica*). Each live California juniper was mapped using a Trimble GeoXH Global Positioning System (GPS) unit and the diameter of each tree was recorded. In addition, other shrubs were recorded using GPS units in two of the plots to provide a comparison of the California junipers and other shrubs on site. The data recorded were then used to calculate the percent cover of California junipers within each 1-acre plot. Aerial photography patterns and field data provided guidance for updating the vegetation map, specifically the Peninsular juniper woodland and scrub.

Dudek met with the County of San Diego to determine the best approach to mapping the Peninsular juniper woodland and scrub. The County agreed that areas with ≥4% cover of California juniper will be mapped as Peninsular juniper woodland and scrub. The additional data collected provided enough information to determine which areas met these mapping requirements for areas considered Peninsular juniper woodland and scrub and other vegetation communities. Each vegetation community is described in Section 1.4.2 based on its species composition and percent of absolute cover.

1.3.4 Flora and Fauna

All plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the *California Native Plant Society On-Line Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2014). For plant species without a California Rare Plant Rank, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2014), and common names follow the U.S. Department of Agriculture Natural Resources Conservation Service PLANTS Database (USDA 2014a). A cumulative list of plant species observed on the Project site is presented in Appendix A.

Focused surveys for special-status wildlife species were conducted in 2013 and 2014. Wildlife species detected during the initial field surveys by sight, calls, tracks, scat, or other signs were recorded. Binoculars (7×50 power) were used to aid in the identification of observed wildlife. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area.

Latin and common names used in this report are based on Crother (2008) for reptiles and amphibians, American Ornithologists' Union (AOU 1998, 2013a, 2013b) for birds, Wilson and Reeder (2005) for mammals, the North American Butterfly Association (NABA 2001, 2003, 2012) for butterflies, and Moyle (2002) for fish. A list of wildlife species observed within the Project site is presented in Appendix B.

1.3.4.1 Focused Surveys and Habitat Assessment for Special-Status Plants

Focused surveys for special-status plant species were originally scheduled for spring and summer 2014. However, due to the ongoing drought conditions in the region, it was determined through discussions with the County that focused plant surveys conducted in 2014 likely would not have been adequate for documenting representative annual plant species on the Project site, and negative survey results for special-status species would not be conclusive. The County's guidelines provide additional guidance in circumstances where field surveys were not conducted. Specifically, the guidelines state the following:

> In some cases, the Director of Planning and Land Use, Public Works, or Parks and Recreation may choose to postpone or suspend some seasonal focused surveys during a particular calendar year if inaccurate or inconclusive survey results are expected due to unsuitable environmental conditions, such as fires, floods, or droughts. In these cases, staff will work with project applicants to determine the best course of action. Options may include one or more of the following, determined on a case-by-case basis:
>
> - Relying on previous year surveys
> - Resurveying the property the following year (assuming proper environmental conditions)
> - Using the County's Species Predictive Model to determine presence/absence (access to data from this model is coordinated through the Department of Planning and Development Services (PDS) staff biologist)
> - Reviewing records from the CNPS, CNDDB, San Diego Plant Atlas, or other reliable sources (County of San Diego 2010b, p. 8)

Dudek reviewed a variety of resources to determine the potential for special-status plants to occur on site. Appendices C and D list the special-status plant species reported in the U.S. Geological Survey (USGS) 7.5-minute Jacumba quadrangle and the surrounding six topographic

quadrangles (CNPS and CNDDB occurrences), referred to as the "7-Quad Search."[1] Appendices C and D also include the special-status plant species reported in the 31 grids of the San Diego Plant Atlas (SDNHM 2014a) that overlap the 7-Quad Search quadrangles, and those identified in the County's *Guidelines for Determining Significance* (County of San Diego 2010b). These appendices contains an analysis of each special-status species' occurrence or potential to occur based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period. Table C-1 lists the special-status plant species that are either not expected to occur or have a low potential to occur; these species are not further addressed in this report. Table C-2 lists the special-status species that have a high or moderate potential to occur on the Project site, and which are therefore addressed in the impact analysis in this report.

For special-status plants with a high or moderate potential to occur (Appendix C), habitat suitability models were generated to assess impacts (see Appendix E for Habitat Suitability Model Inputs). Habitat suitability is primarily based upon habitat information provided by CNPS (2014). The habitat requirements for each of the special-status plant species were compared with the Project-specific vegetation community maps, soils, and elevation to identify the location and acreages of suitable habitat for each special-status species on site. Resources referenced to determine species occurrence in the vicinity of the Project site include the East County Substation (ECO) Project Rare Plant Survey Report (RBC 2009a) and ECO environmental impact report/environmental impact statement (EIR/EIS) (CPUC and BLM 2011), Jepson Flora Project[2] (Jepson Flora Project 2014), CNDDB (CDFW 2014a), San Diego Plant Atlas (SDNHM 2014a), and USFWS GIS occurrence data (USFWS 2014), and the *Final Environmental Impact Report/Environmental Impact Statement for the SDG&E East County Substation Project, Tule Wind LLC, Tule Wind Project, and Energia Sierra Juarez U.S. Transmission LLC, Energia Sierra Juarez Gen-Tie Project* (CPUC and BLM 2011).

1.3.4.2 Focused Surveys for Quino Checkerspot Butterfly

Focused Quino checkerspot butterfly surveys were conducted for the Proposed Project (solar and gen-tie sites) over four visits within a 6-week period between March 14 and April 17, 2013. Surveys were conducted in accordance with current USFWS protocol (USFWS 2002a, 2002b) by Quino checkerspot butterfly permitted biologists Anita M. Hayworth, PhD (TE781084-6),

[1] Usually referred to as the "9-Quad Search." However, since Project is on the U.S./Mexico border there are only seven quadrangles to report.

[2] Jepson Flora Project is a comprehensive resource for California plant species and is widely adopted by botanists. As noted on the Jepson Herbarium website, "the Jepson Flora Project brings together all of the floristic references and data of the Jepson Herbarium. Resources of the Flora Project are directly linked to the Consortium of California Herbaria, CalPhotos, the California Native Plant Society, California Exotic Pest Plant Council, USDA-Plants database, and many other external sites" (http://ucjeps.berkeley.edu/jepsonflora/index.html).

Brock A. Ortega (TE813545-5), Jeff D. Priest (TE840619-2), Kamarul J. Muri (TE051250-0), Paul M. Lemons (TE051248-4), Vipul R. Joshi (TE019949-0), and independent investigators Callie J. Ford, Patricia C. Schuyler, Shane Valiere, Tricia L. Wotipka, and Jonathan M. Walker.

The Proposed Project site was divided into four survey areas, each of which was surveyed generally once a week during the 5-week flight season. If poor weather conditions precluded completion of a survey during a particular week, the portion that was missed was surveyed the following week in addition to the regularly scheduled survey.

The survey methods consisted of slowly walking roughly parallel transects throughout all potential habitats within the survey area. Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour. All wildlife species were recorded and are included in Appendix B.

Surveys were conducted only during acceptable weather conditions (i.e., surveys were not conducted during fog, drizzle, or rain; sustained winds greater than 15 miles per hour (mph) measured 4–6 feet above ground level; temperature in the shade at ground level less than 60 degrees Fahrenheit (°F) on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). To accommodate for adverse weather conditions (e.g., temperature less than 60°F at ground level on a clear day; temperatures less than 70°F on an overcast or cloudy day; and/or sustained winds greater than 15 mph) experienced during the scheduled survey dates, additional surveys were conducted at the end of the survey period (week 6) for Survey Area 3/week 4, Survey Area 1/week 5, and Survey Area 2/week 5. Survey times, personnel, and conditions during the Quino checkerspot butterfly survey are shown in Table 2. A 200-scale (1 inch = 200 feet) aerial photographic base of the Project site overlain with vegetation communities was used to map any detected Quino checkerspot butterfly or host plants. Binoculars (7×50 and 10×42) were used to aid in detecting and identifying butterfly and other wildlife species.

1.3.4.3 Wintering Raptor Surveys

A habitat assessment and survey within the proposed 304-acre Project site was conducted in December 2013 and January 2014 for raptors, including golden eagle, prairie falcon, Cooper's hawk, sharp-shinned hawk, turkey vulture, and red-shouldered hawk. During this effort, all portions of the site were reviewed for habitat suitability. In addition, the biologist sat at a single overlooking location for approximately 5 hours during the morning to early afternoon period to search for large birds. A scope (15× to 60× magnification) and binoculars (10×40 magnification) were used to identify observed raptorial species (i.e., hawks, owls, eagles, falcons). While there, the biologist used a data sheet to note observed species and behavior. No special-status species were observed.

These assessments included evaluating the potential eagle and other raptor foraging potential of the site and gen-tie alignment in its current state and after construction. This allowed for an evaluation of potential impacts related to foraging, bird strike, and electrocution.

1.3.4.4 Nesting Raptor and Foraging Surveys

A habitat assessment and survey within the proposed 304-acre Project site was conducted in May, June, and July 2014 for nesting raptors, including golden eagle, prairie falcon, Cooper's hawk, sharp-shinned hawk, turkey vulture and red-shouldered hawk. The three-visit survey included traversing all roads on site while searching for potentially suitable nesting resources (e.g., trees, large rock outcroppings). No nests were detected. During this effort, all portions of the site were reviewed for suitability. In addition, the biologist sat at a single overlooking location for approximately 5 hours during the morning to early afternoon period to search for raptorial species (i.e., hawks, eagles, owls, falcons) foraging activities. A scope (15× to 60× magnification) and binoculars (10×40 magnification) were used to identify observed raptorial species. While there, the biologist used a data sheet to note observed species and behavior. No special-status species were observed.

These assessments included evaluating the potential eagle and other raptor foraging and nesting potential of the site and gen-tie alignment in its current state and after construction. This allowed for an evaluation of potential impacts related to foraging, bird strike, and electrocution.

1.3.4.5 Burrowing Owl Habitat Surveys

Burrowing owl surveys were conducted within the proposed 304-acre Project site (solar and gen-tie alignment) following the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFG 2012a) guidelines. Prior to conducting burrowing owl habitat surveys, relevant sources pertaining to burrowing owl occurrences, including CNDDB (CDFW 2014a) and ECO EIR/EIS (CPUC and BLM 2011), were examined along with mapped vegetation communities for the site and surrounding areas. Based on positive observations of the species in the vicinity (CPUC and BLM 2011) and vegetation communities present (i.e., semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land), a habitat assessment was conducted. This assessment occurred during one visit in March 2014. During the visit, the entire potential Project area (including areas that would be directly/indirectly impacted by the Proposed Project) was examined. Based on the presence of potentially suitable burrows, suitable vegetation communities on site, and the prior observation of the species in the vicinity, burrowing owl surveys were initiated.

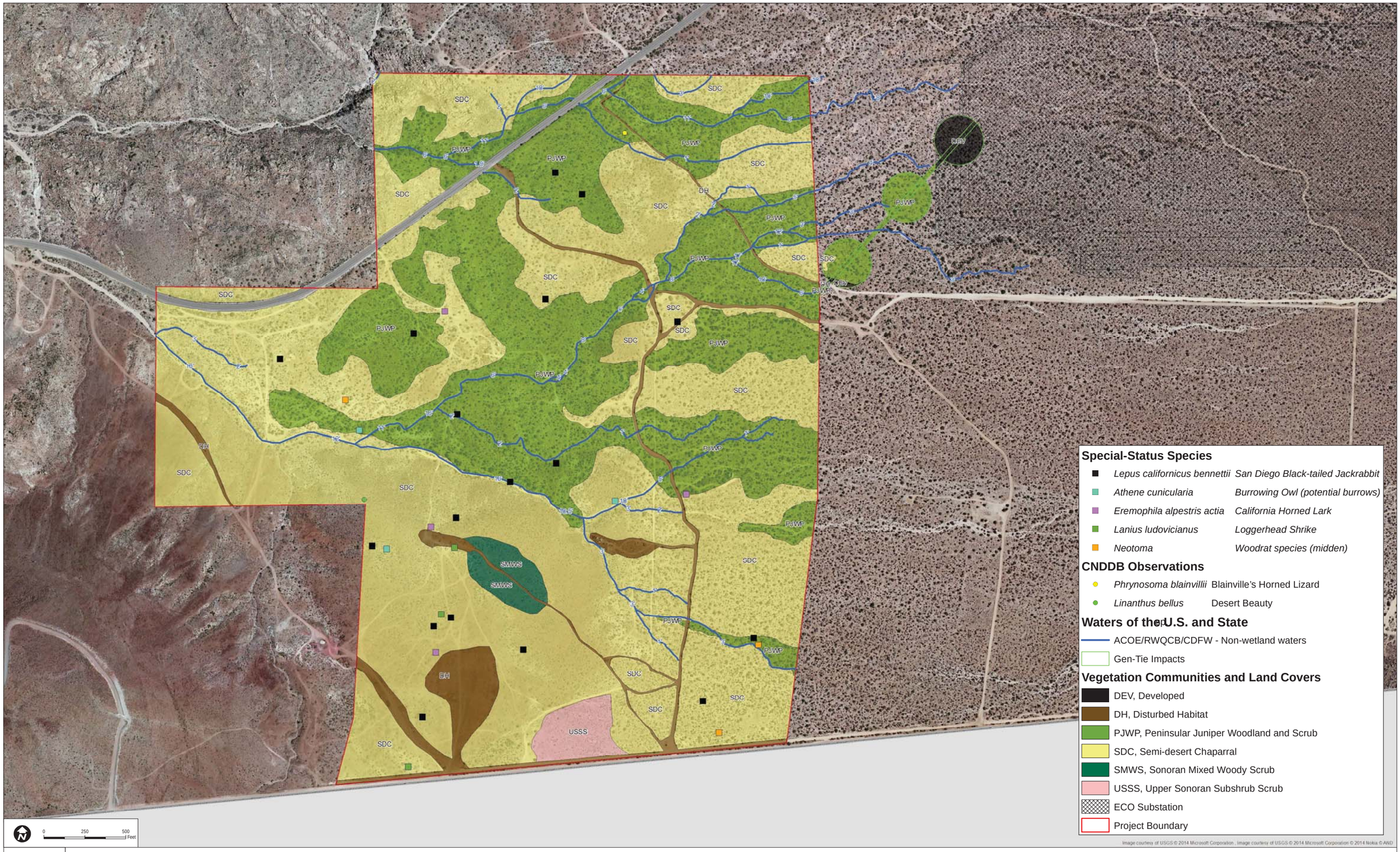
Four site visits were conducted between March and July 2014 (see Table 1) during daylight hours. The first visit was conducted in March 2014 and the last three visits were timed to occur

at least 3 weeks apart between May and July 2014, during the peak of the breeding season.[3] The first visit included searching for the presence of suitable burrows and/or burrow surrogates (>11 centimeters (4 inches) in diameter (height and width) and >150 centimeters (60 inches) in depth). Surveys were conducted throughout Proposed Project site as it was identified in the habitat assessment as containing suitable habitat. The multi-visit survey included walking straight-line transects spaced 7 to 20 meters (23 to 66 feet) apart. At the start of each transect and at least every 100 meters (330 feet) the entire visible Project was scanned for burrowing owls using binoculars (10×40 magnification). All potential burrows were examined for sign and documented using a GPS unit. Surveys were conducted under good weather conditions that would permit clear detection of individuals should they occur on site. Although direct sign of burrowing owl was not present on site, approximately three potential burrows (including one complex) were recorded (Figure 4). See Section 1.3.6 for survey limitations.

1.3.5 Jurisdictional Wetlands Delineation

Dudek conducted a formal jurisdictional wetlands delineation in February 2013 for the proposed solar site. A formal jurisdictional delineation for the gen-tie site was then completed in September 2014. Both delineations were conducted in accordance with the methods prescribed in the 1987 *Wetland Delineation Manual* (Environmental Laboratory 1987), the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (*Version 2.0*) (ACOE 2008) and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008). Although it was not yet published at the time of the delineation, the jurisdictional delineation is consistent with the mapping methods described in the *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (CEC 2014). The information required to process an approved jurisdictional determination in accordance with the U.S. Army Corps of Engineers (ACOE)/Environmental Protection Agency (EPA) Rapanos Guidance (ACOE 2008; ACOE and EPA 2008; Environmental Laboratory 1987) was gathered for the solar site. During the jurisdictional delineation surveys, the entire Project site was walked and evaluated for evidence of an OHWM, surface water, saturation, wetland vegetation, and nexus to a traditional navigable water of the United States (TNW). The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations.

[3] In California, the burrowing owl breeding season expends February 1 through August 31 (CDFG 2012a). However, visits were also timed to occur within the commonly accepted breeding season (April 15 and July 15; CBOC 1997, as cited in CDFG 2012a).



DUDEK

8477

SOURCE: Bing 2014, SanGIS 2013

Jacumba Solar Project

FIGURE 4

Biological Resources

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Pursuant to the federal Clean Water Act, ACOE and Regional Water Quality Control Board (RWQCB) wetland waters include those supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with the ACOE, but can also include isolated features that have evidence of surface water inundation pursuant to the state Porter-Cologne Water Quality Control Act. These areas generally support at least one of the three ACOE wetlands indicators but are considered isolated through the lack of surface water hydrology/connectivity downstream.

The ACOE/EPA Rapanos Guidance states that the ACOE will regulate TNWs, adjacent wetlands, and relatively permanent waters (RPWs) tributary to TNWs, and adjacent wetlands if there is a significant nexus from the site. Non-navigable tributaries that are not relatively permanent waters (non-RPW) and wetlands adjacent to such tributaries are assessed on a case-by-case basis to determine whether they have a significant nexus to a TNW. A significant nexus was determined present if the tributary had more than a speculative or insubstantial effect on the chemical, physical, and/or biological integrity of a TNW. Parameters evaluated included flow volume, flow duration, flow frequency, functionality, proximity to a tributary, and proximity to the nearest TNW.

The County's RPO (County of San Diego 2007) identifies environmental resources, including wetlands, present within the County, and provides measures to preserve these resources. The RPO defines wetlands as lands that have one or more of the following attributes: (1) lands that periodically support a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) lands in which the substratum is predominantly undrained hydric soil; or (3) lands where an ephemeral or perennial stream is present and whose substratum is predominately non-soil, and where such lands contribute substantially to the biological functions or values of wetlands in the drainage system. CDFW- and County-regulated wetlands are areas where a predominance of hydrophytic vegetation was associated with a stream channel or where an area supported at least one of the three wetlands indicators (i.e., hydrology, hydric soils, or hydrophytic vegetation).

1.3.6 Survey Limitations

Plants and wildlife sign or direct observations of individuals were recorded during vegetation mapping, juniper woodland mapping, jurisdictional delineations, Quino checkerspot butterfly surveys, and burrowing owl habitat assessments; special-status species observed during these surveys were recorded and/or mapped.

Surveys generally were conducted in winter and spring, which does not provide favorable conditions for detecting and identifying annual plant species that bloom in the summer and fall or for detecting some special-status birds nesting on site. As described in Section 1.3.4.1,

focused surveys for special-status plants were not conducted due to ongoing drought conditions experienced in the region. The nearest weather station with recent precipitation data[4] is located in Campo, California, and generally receives an average rainfall of approximately 14.82 inches per year (WRCC 2014). Precipitation water year (i.e., July 1 to June 30) amounts for Campo from 2010 to 2011 were recorded at 21.01 inches, 2011 to 2012 were recorded at 11.29 inches, from 2012 to 2013 were recorded at 9.25 inches, and from 2013 to 2014 were recorded at 6.95 inches. Therefore, flora data collected and presented in Appendix A are not expected to include all annual species that have potential to occur on the Project site.

With the exception of the surveys for Quino checkerspot butterfly and burrowing owl, focused surveys for special-status wildlife species and reptile/small mammal trapping were not conducted for the Project. No special-status small mammals were determined to have high potential to occur (see Appendix F); therefore, no trapping was required. Nocturnal surveys were not conducted for the Project. Birds represent the largest component of the vertebrate fauna since most are active in the daytime. As such, diurnal surveys maximize the number of observations for avian species. In contrast, diurnal surveys usually result in few observations of mammals, many of which are active at night. Similarly, many species of reptiles and amphibians are nocturnal or cryptic in their habits and may be difficult to observe using standard meandering transects. Focused surveys for Quino checkerspot butterfly were conducted in March and April, during the flight season, which is the required survey protocol (USFWS 2002a). Although a few scheduled visits were excluded based on adverse weather conditions (see Table 2), additional surveys were scheduled during a sixth week of surveys.

The gen-tie alignment site was surveyed for burrowing owl and Quino checkerspot butterfly. Jurisdictional delineation and vegetation mapping were completed for the gen-tie alignment site in September 2014.

1.4 Environmental Setting (Existing Conditions)

The Proposed Project is composed of two major components: (1) the development of the Jacumba Solar Energy site and (2) construction of a new approximately 1,500-foot-long 138 kV gen-tie alignment site required to connect the energy system to the existing ECO Substation.

The proposed 304-acre study area is situated within the following Assessor's Parcel Numbers: 661-080-01, 661-080-04, 661-080-05, 661-080-08, 661-041-02, 661-041-03, and 661-041-04. The Project is located on private land approximately 3 miles east of the community of Jacumba

[4] Although Boulevard 2 and Ocotillo Stations are closer to the Project site, precipitation data for these stations are not recorded past 2008.

Hot Springs, 0.5 mile south of I-8, and 1.2 miles west of Imperial County in Southeastern San Diego County, California (see Figure 1). More specifically, the study area is situated south of Old Highway 80 and immediately north of the U.S./Mexico Border, within the Jacumba USGS 7.5-minute quadrangle, Township 18 South, Range 8 East, Sections 2 and 11 (see Figure 2).

The study area is undeveloped, with on-site elevation ranging between 3,114 and 3,176 feet above mean sea level (amsl). The site is relatively flat, except for a hill near the southwest corner and several unvegetated channels that generally flow to the northwest across the site.

According to the U.S. Department of Agriculture (USDA 2014b), there are five soil types found in the Project area; descriptions of these soil types, based on Bowman (1973) and the Web Soil Survey (USDA 2014b), appear below.

Acid igneous rock land (AcG) soil is found in rough broken terrain. The topography ranges from low hills to very steep mountains. Large boulders and rock outcrops of granite, quartz diorite, gabbro, basalt, and other rock types cover greater than 50–90% of the total area of this soil type. The soil material is very shallow, consisting of loam to loamy course sand textures over decomposed granite or basic igneous rock. Pockets of deep soils are present between the rocks in some locales. Many areas are practically barren and have very rapid runoff. The vegetation for this soil type varies by elevation and climate. In the foothills and mountains, acid igneous rock land supports various chaparral vegetation communities.

The Mecca series consists of well-drained, very deep coarse sandy loams derived from granitic alluvium. The A horizon is composed of brown to dark brown, moderately alkaline coarse sandy loam and is 8–12 inches thick. The C horizon ranges from yellowish-brown or dark yellowish-brown to light brown or reddish brown in color and a moderately alkaline calcareous coarse sandy loam to loam texture. This horizon extends to a depth of more than 60 inches. These soils are found on alluvial fans and alluvial plains with slopes of 0%–5% and contain moderate permeability. Mecca soils occur at elevations ranging from 200–2,000 feet amsl. The Mecca soil inclusion within the Project area is the Mecca coarse sandy loam with 2%–5% slopes (MnB). This soil is gently sloping with slow runoff. Native vegetation expected on this soil type include cactus, creosote bush (*Larrea tridentata*), ocotillo (*Fouquieria splendens*), and annual grasses. Mecca soils are also used for range, irrigated alfalfa, small grain, and truck crops.

The Rositas series consists of excessively drained, very deep loamy coarse sands derived from granitic alluvium. The A horizon is approximately 3–8 inches thick, ranging from light brownish gray to pale brown or very pale brown in color and from loamy coarse sand or fine sand to sandy in texture. The C horizon extends to a depth of more than 60 inches. It ranges from pale brown to very pale brown or light yellowish brown in color and from gravelly coarse sand to loamy fine sand in texture. The Rositas soil inclusion within the Project area is the Rositas loamy coarse

sand, 2%–9% slopes (RsC). This soil is gently to moderately sloping and found on alluvial fans and alluvial plains with slopes averaging 5%. Rositas soils occur at elevations ranging from 100–2,000 feet amsl. This soil series has a water holding capacity of 3–4 inches, with rapid permeability and slow to medium runoff. Native vegetation expected on this soil type is mainly ocotillo, cholla (*Cylindropuntia* sp.), creosote bush, saltbush (*Atriplex* sp.), and annual grasses.

The Rough Broken Land (RuG) series is made up of well drained to excessively drained soils associated with steep and very steep land. Areas of exposed raw sediments are commonly found within this soil series, including areas of very shallow soils. Runoff is rapid to very rapid and vegetation consists of sparse cover of low woody shrubs.

The Sloping Gullied Land (SrD) series occurs on alluvial fans in the desert adjacent to mountains. This soil series is found within steep talus slopes and fans below basalt ledges in the vicinity of Jacumba. The texture ranges from clay loam to gravelly, cobbly sand derived from igneous, sedimentary, and metamorphic rocks. Limy material has been exposed where gullies have dissected areas of old alluvium. The soils are shallow to moderately deep underlain by basalt, volcanic tuff, and gravel with medium to very rapid runoff. Native vegetation expected on this soil type is primarily desert shrubs, cactus, and annual forbs and grasses with sparse cover.

1.4.1 Regional Context

The Proposed Project is located in the unincorporated community of Jacumba in southeast San Diego County within private lands located adjacent to the U.S./Mexico Border (Figure 3). The Proposed Project area is generally an arid desert environment that supports a limited range of habitats and biological communities. These habitats and communities include juniper woodland, desert scrub, and chaparral. Additionally, these habitats and communities may vary depending on the ecoregion, soils and substrate, and topography. Topography within the Proposed Project site varies from a gentle slope to steeper terrain on the southwest portion of the Project site.

In San Diego County, several resource conservation planning efforts have been completed or are currently in progress with the long-term goal of establishing a regional reserve system that will protect native habitat lands and their associated biota. The ultimate goals of these plans are the establishment of biological reserve areas in conformance with the state Natural Communities Conservation Planning Act, and to contribute to the preserve system already established by the approved Multiple Species Conservation Program (MSCP).

The entire Project site is within the draft East County Multiple Species Conservation Program (ECMSCP) Plan Area (see Figure 3, Regional Context); this area is subject to evaluation of consistency with the ECMSCP Planning Agreement (County of San Diego 2008). This evaluation is provided in Section 7 of this report.

The majority of the Project area is mapped as Agriculture or Natural Upland outside Focused Conservation Areas (FCAs) (Figure 3). Although the Project area does not fall within preliminarily delineated FCA of the ECMSCP planning area, a small portion of the area is mapped as Riparian/Wetland Habitat and Transition Zone outside of an FCA. This suggests that the area has regional conservation value. Projects in this area are subject to the Planning Agreement for the ECMSCP (County of San Diego 2008), which is intended to establish whether their approval would have an effect on the preparation and approval of the draft ECMSCP.

1.4.2 Habitat Types/Vegetation Communities

One land cover type and four native vegetation communities were mapped by Dudek within the Proposed Project area. Native vegetation communities within the Project area include Peninsular juniper woodland and scrub, semi-desert chaparral, Sonoran mixed woody scrub, and upper Sonoran subshrub scrub. One land cover type (non-vegetated area) occurs within the Project area: disturbed land. The vegetation communities and land cover type listed above are described as follows, their acreages are presented in Table 3, and their spatial distributions are presented on Figure 4.

In September 2010, the California Department of Fish and Game (CDFG)[5] published the *List of California Vegetation Alliances and Associations* (CDFG 2010), which uses the scientific name of the dominant species in that alliance as the alliance name and includes a global and state rarity rank based on the NatureServe Standard Heritage Program methodology (NatureServe 2012). The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2012):

1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure

For example, G1 would indicate that a vegetation community is critically imperiled across its entire range (i.e., globally). A rank of S3 would indicate the vegetation community is vulnerable and at moderate risk within a particular state or province, although it may be more secure elsewhere (NatureServe 2012). Because NatureServe ranks vegetation communities at the global

[5] Effective January 2013, the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW). In this report, references to documents and guidance preceding the official name change use CDFG, and references to documents and guidance after 2012 and general references to the department use CDFW.

level, they have few rankings at the state or province level available. However, the *List of California Vegetation Alliances and Associations* (CDFG 2010) includes state-level rarity rankings (i.e., the subnational (S) rank) for vegetation communities. The *List of California Vegetation Alliances and Associations* (CDFG 2010) is considered the authority for ranking the conservation status of vegetation communities in California.

CDFW's guidelines for determining high-priority vegetation types include considering any communities listed with a ranking of S1 to S3 and ascertaining whether the specific stands of the community type within the Project area are "considered as high-quality occurrences of a given community." The consideration of stand quality includes cover of non-native invasive species, human-caused disturbance, reproductive viability, and insect or disease damage (CDFG 2012b).

In addition, the County requires mitigation at varying ratios for many vegetation communities. These vegetation communities follow the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). The *Manual of California Vegetation* (2nd edition) (Sawyer et al. 2009) was used as an additional reference to help determine characteristics (such as percentage of species cover) of various classifications. Vegetation communities considered special status are those with an "S" ranking of 1, 2, or 3 (CDFG 2010), as well as communities that require mitigation by the County (County of San Diego 2010a, Table 5).

Table 3
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[a]	Jacumba Solar Existing Acreage	Gen-Tie Existing Acreage
Upland Scrub and Chaparral			
Semi-desert chaparral[b]	37400	179.4	0.1
Sonoran mixed woody scrub[b]	33210	3.2	—
Upper Sonoran subshrub scrub[b]	39000	3.6	—
	Subtotal	*186.2*	*0.1*
Woodland			
Peninsular juniper woodland and scrub[b]	72320	98.2	3.3
	Subtotal	*98.2*	3.3
Non-Native Communities and Land Covers			
Disturbed land	11300	13.1	—
	Subtotal	*13.1*	—
Total	**—**	**297.5[c]**	**3.4**

Notes:
[a] Holland (1986) as modified by Oberbauer et al. (2008).
[b] Considered special status by the County (2010a).
[c] Does not include existing road acreage (such as Old Highway 80).

1.4.2.1 Semi-Desert Chaparral (37400)

According to Holland (1986), semi-desert chaparral is similar to northern mixed chaparral (37710), but it is typically not quite as tall (4.9–10 feet) and more open. Dominant taxa within this community include *Juniperus* sp., *Eriogonum* sp., and *Opuntia* sp. Characteristic species include chamise (*Adenostoma fasciculatum*), *Arctostaphylos* sp., *Ceanothus* sp., *Quercus* sp., and a variety of other shrubs and subshrubs. This community is found on the high desert plateaus and escarpment of the Peninsular Range in San Diego County associated with drier, cooler winters (Holland 1986). On site, semi-desert chaparral is found within areas where California juniper is less prominent (less than 4% absolute cover), including areas where California junipers have burned in the past and have not yet recovered. The semi-desert chaparral on site includes jointfir (*Ephedra* sp.), goldenbush (*Ericameria* sp.), Eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), creosote bush, and common deerweed (*Acmispon glaber*). Semi-desert chaparral is the dominant vegetation community on the solar site, totaling 179.4 acres within the study area (Figure 4). Additionally, 0.1 acre of semi-desert chaparral exist within the gen-tie alignment site (Figure 4).

The jointfir, Eastern Mojave buckwheat, and creosote bush were co-dominant species in this community; the *Ephedra* was not keyed to species, but the *Eriogonum fasciculatum* (California buckwheat scrub) and *Larrea tridentata* (creosote bush scrub) alliances have a rank of G5S5 in CDFG (2010), meaning they are globally secure and secure in the state. Semi-desert chaparral is not considered special status by CDFW, but is considered special status based on mitigation recommendations of the County (County of San Diego 2010a).

1.4.2.2 Sonoran Mixed Woody Scrub (33210)

According to Holland (1986), Sonoran mixed woody scrub is similar to Sonoran mixed woody and succulent scrub (33220) but with additional woody species. Characteristic species include creosote bush, burrobush (*Ambrosia dumosa*), ocotillo, *Opuntia* sp., brittlebush (*Encelia farinosa*), and *Krameria* sp. In San Diego County, this community is associated with lower alluvial fans above the desert floor and below the coarse mountain substrates (Holland 1986).

Sonoran mixed woody scrub on site lack California juniper and are dominated by creosote bush, in addition to other shrub and succulent cover. Other commonly occurring species include jointfir, cholla, goldenbush, and snakeweed (*Gutierrezia* sp.). Sonoran mixed woody scrub only occurs in one small patch within the solar site composed of 3.2 acres toward the central portion of the study area (Figure 4).

The *Larrea tridentata* (creosote bush scrub) alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Sonoran mixed woody scrub is not

considered special status by CDFW, but is considered special status based on mitigation recommendations of the County (County of San Diego 2010a).

1.4.2.3 Upper Sonoran Subshrub Scrub (39000)

Upper Sonoran subshrub scrub is comprised of low, fairly penetrable scrub of soft-wooded, summer-dormant, drought-tolerant shrubs (Holland 1986). It is usually associated with well-drained soils derived from sandstone, shale, or sterile white diatomaceous deposits. In San Diego County, it intergrades with some chaparrals at higher elevations. Dominant vegetation found on site varies but usually includes narrowleaf goldenbush (*Ericameria linearifolia*), Eastern Mojave buckwheat, bladderpod spiderflower (*Isomeris arborea arborea*), or California jointfir (*Ephedra californica*) (Holland 1986). Areas mapped as upper Sonoran subshrub scrub are dominated by Eastern Mojave buckwheat, goldenbush, jointfir, cholla, and deerweed. This area contains native shrub cover but lacks California juniper and creosote bush. Sonoran subshrub scrub occurs in one patch (approximately 3.6 acres) located along the southern portion of the solar study area (Figure 4).

The *Eriogonum fasciculatum* (California buckwheat scrub) alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Sonoran mixed woody scrub is not considered special status by CDFW, but is considered special status based on mitigation recommendations of the County (County of San Diego 2010a).

1.4.2.4 Peninsular Juniper Woodland and Scrub (72320)

Peninsular juniper woodland and scrub consists of relatively dense pinyon woodland dominated by Parry pinyon (*Pinus quadrifolia*), with California juniper occurring within xeric sites below the trees' dripline. This community occurs in alluvial fans and desert slopes that are slightly lower and more xeric than the Peninsular pinyon woodland community (72310) with which it intergrades (Holland 1986). Other dominant species include Parry's beargrass (*Nolina parryi*), Sonoran scrub oak (*Quercus turbinella*), Mojave yucca (*Yucca schidigera*), and sagebrush (*Artemisia tridentata*).

Peninsular juniper woodland and scrub observed on site contains California juniper at greater than 4% absolute cover and lacks pines (*Pinus* sp.). Other commonly occurring species include creosote bush, jointfir, goldenbush (*Ericameria* spp.), and snakeweed. Peninsular juniper woodland and scrub occurs in large patches throughout the study area within the Proposed Project site (Figure 4). Within the solar site, there are 98.2 acres and within the gen-tie alignment there are 3.3 acres.

The *Juniperus californica* (California juniper woodland) alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Peninsular juniper

woodland and scrub is not considered special status by CDFW, but is considered special status based on mitigation recommendations of the County (County of San Diego 2010a).

1.4.2.5 Disturbed Land (11300)

Disturbed land refers to areas that have been permanently altered by previous human activity that has eliminated all future biological value of the land for most species. The native or naturalized vegetation is no longer present, and the land lacks habitat value for special-status wildlife, including potential raptor foraging. Disturbed land found throughout the study area consists primarily of unpaved roads (Figure 4). These roads have been graded and contain little native vegetation. Within the solar site, there are 13.1 acres.

Disturbed land is not considered special status by CDFW or the County (County of San Diego 2010a).

1.4.3 Flora

Twenty-nine vascular plant species, consisting of 26 native species (90%) and three non-native species (10%), were recorded on site during the reconnaissance surveys and jurisdictional delineation. Appendix A includes a cumulative list of plant species observed on site. As noted in the discussion of survey limitations, the Project vicinity had subnormal rainfall in winter of 2013 and annual plants were expected to exhibit poor production. Therefore, several undetected annual plant species may occur on site. Special-status plant species that have moderate or high potential to occur in the Project site are discussed in Section 1.4.5.

1.4.4 Fauna

The Project area supports habitat for common upland species. Scrub, chaparral, and woodland habitats within the Project area provide foraging and nesting habitat for migratory and resident bird species and other wildlife species. Rock outcroppings are present north of Old Highway 80 within the Project area and provide cover and foraging opportunities for wildlife species, including reptiles and mammals.

A list of the wildlife species incidentally observed within and adjacent to the Project area during focused Quino checkerspot butterfly surveys, vegetation mapping, burrowing owl survey, and rare plant surveys is provided in Appendix B. There were 99 species observed on the Project site. Species richness in the Project area is moderate due to the property size, amount of undeveloped land, and the number of native upland habitats. Species richness is generally increased with the presence of more habitat types and ecotones. Although species richness is moderate, the number of species and the wildlife population levels (i.e., number of individuals) is typical for undeveloped areas in this region, particularly those areas that support multiple upland habitat types. Special-status wildlife species are addressed in Section 1.4.6.

1.4.4.1 Birds

Fifty-one bird species were observed within the Project area, including brown-headed cowbird (*Molothrus ater*), sharp-shinned hawk (*Accipiter striatus*), white-throated swift (*Aeronautes saxatalis*), black-throated sparrow (Amphispiza bilineata), western scrub-jay (*Aphelocoma californica*), Bell's sparrow (*Artemisiospiza belli*), sagebrush sparrow (*Artemisiospiza nevadensis*), verdin (*Auriparus flaviceps*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), Costa's hummingbird (*Calypte costae*), cactus wren (*Campylorhynchus brunneicapillus*), house finch (*Carpodacus mexicanus*), turkey vulture (*Cathartes aura*), wrentit (*Chamaea fasciata*), killdeer (*Charadrius vociferus*), lark sparrow (*Chondestes grammacus*), lesser nighthawk (*Chordeiles acutipennis*), common raven (*Corvus corax*), California horned lark (*Eremophila alpestris actia*), American kestrel (*Falco sparverius*), greater roadrunner (*Geococcyx californianus*), hooded oriole (*Icterus cucullatus*), Scott's oriole (*Icterus parisorum*), dark-eyed junco (*Junco hyemalis*), loggerhead shrike (*Lanius ludovicianus*), California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), ash-throated flycatcher (*Myiarchus cinerascens*), band-tailed pigeon (*Patagioenas fasciata*), cliff swallow (*Petrochelidon pyrrhonota*), phainopepla (*Phainopepla nitens*), Nuttall's woodpecker (*Picoides nuttallii*), spotted towhee (*Pipilo maculatus*), blue-gray gnatcatcher (*Polioptila caerulea*), black-tailed gnatcatcher (*Polioptila melanura*), bushtit (*Psaltriparus minimus*), great-tailed grackle (*Quiscalus mexicanus*), rock wren (*Salpinctes obsoletus*), black-throated gray warbler (*Setophaga nigrescens*), western bluebird (*Sialia mexicana*), Brewer's sparrow (*Spizella breweri*), chipping sparrow (*Spizella passerina*), and Bewick's wren (*Thryomanes bewickii*).

1.4.4.2 Mammals

Thirteen mammal species were detected (directly or indirectly) within and adjacent to the Project area during biological surveys, including Botta's pocket gopher (*Thomomys bottae*), desert cottontail (*Sylvilagus audubonii*), brush rabbit (*Sylvilagus bachmani*), San Diego black-tailed jackrabbit (*Lepus californica bennettii*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), California ground squirrel (*Spermophilus beecheyi*), chipmunk (*Tamias* sp.), long-tailed weasel (*Mustela frenata*), kangaroo rat species (*Dipodomys* sp.), woodrat species (*Neotoma* sp.), bobcat (*Lynx rufus*), domestic horse (*Equus caballus*), and coyote (*Canis latrans*).

Bats occur throughout most of Southern California and may use any portion of the Project area as foraging habitat. There is a moderate potential for bat species to day roost within the rock crevices, rock outcroppings or trees within the northern portion of the Project area (north of Old Highway 80) (see Appendix F). Maternity roosts are not expected to occur within the Project area due to the lack of structures, large trees, caves, undercrossings, and other typical maternity roost habitat. Because the majority of the surveys were conducted during daylight hours and

~~surveys did not include~~ focused bat surveys were not required and~~efforts to locate roosting bats,~~ no bats were detected within the Project area.

1.4.4.3 Invertebrates

Twenty-eight invertebrate species were observed within and adjacent to the Project area during biological surveys: bramble hairstreak (*Callophrys dumetorum*), Loki juniper hairstreak (*Callophrys gryneus loki*), southern blue (*Glaucopsyche lygdamus australis*), acmon blue (*Plebejus acmon*), western pygmy blue (*Brephidium exile*), perplexing (green) hairstreak (*Callophrys dumetorum perplexa*), southern blue (*Glaucopsyche lygdamus*), monarch (*Danaus plexippus*), common buckeye (*Junonia coenia*), west coast lady (*Vanessa annabella*), painted lady (*Vanessa cardui*), chalcedon checkerspot (*Euphydryas chalcedona*), Behr's metalmark (*Apodemia mormo virgulti*), funereal duskywing (*Erynnis funeralis*), desert black swallowtail (*Papilio polyxenes coloro*), western tiger swallowtail (*Papilio rutulus*), anise swallowtail (*Papilio zelicaon*), orangetip (*Anthocharis* sp.), desert orangetip (*Anthocharis cethura*), California dogface (*Colias eurydice*), orange sulphur (*Colias eurytheme*), Harford's sulphur (*Colias harfordii*), desert pearly marble (*Euchloe hyantis lotta*), checkered white (*Pontia protodice*), pearly marble (*Euchloe hyantis*), Sara orangetip (*Anthocharis sara*), Mexican tiger moth (*Notarctia proxima*), and harvester ant (*Pogonomyrmex* sp.).

1.4.4.4 Fish

No fish species were documented in the Project area during 2012–2014 surveys. There is no surface flow, no open water/herbaceous vegetation communities, and no perennial water sources within the Project area.

1.4.5 Special-Status Plant Species

Endangered, rare, or threatened plant species, as defined in CEQA Guideline 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of the California Endangered Species Act (CESA) and the federal Endangered Species Act (ESA), (2) plant species with a CRPR 1 through 4, (CDFW 2014b; CNPS 2014), and (3) plant species considered "sensitive" by the County (County of San Diego 2010a, Table 2).

Special-status plant species known to occur in the surrounding vicinity and their potential to occur on site are presented in Appendix C and D. These appendices analyze each of these special-status species' occurrence or potential to occur based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period. Appendix C includes the special-status species that have a moderate or high potential to occur. Appendix D includes the special-status species that are either not expected to occur or have a low potential to occur.

Fourteen special-status plant species have a moderate or high potential to occur on the Project site (Appendix C), nine County List A or B species, one County List C species, and four County List D species (County of San Diego 2010a). Each of these special-status species is described in Sections 1.4.5.2 (County List A and B Species) and 1.4.5.3 (County List C and D Species and other special-status species).

1.4.5.1 Critical Habitat

There is no USFWS-designated critical habitat for plant species within 5 miles of the Project area (USFWS 2014, Figure 5).

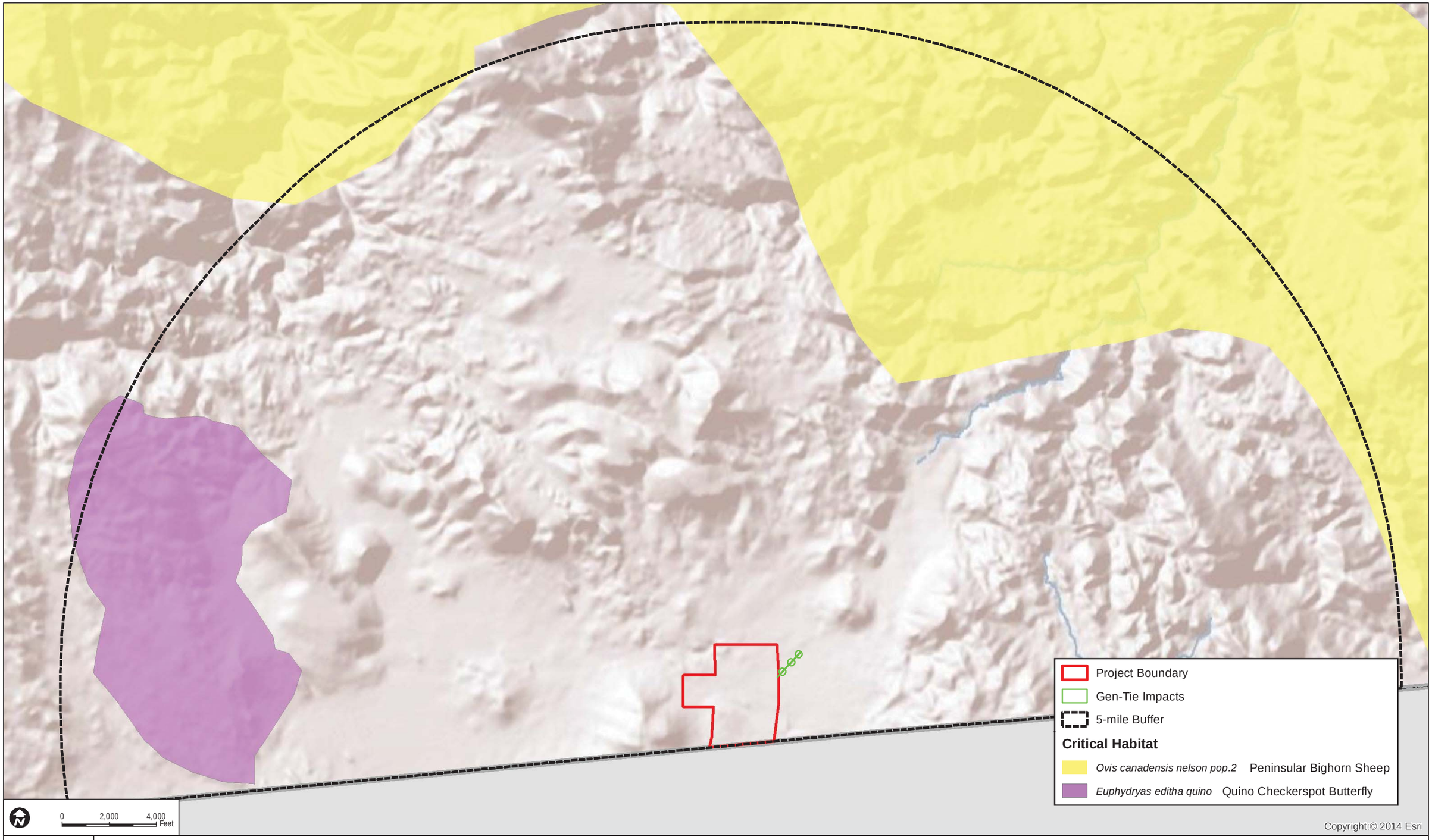
1.4.5.2 County List A and B Species

Plants categorized as County List A species are plants that are rare, threatened, or endangered in California and elsewhere. Plants categorized as County List B are rare, threatened, or endangered in California, but more common elsewhere (County of San Diego 2010a). County List A and B species that have been identified as having a moderate to high potential to occur within the Proposed Project site are described as follows and included in Appendix C; the suitable habitat was quantified based on the Habitat Suitability Model in Appendix E.

Pygmy lotus (*Acmispon haydonii*)

Pygmy lotus is a County List A and has a CRPR of 1B.3. This perennial herb is in the Fabaceae family, has been documented at elevations from 1,7016 to 3,937 feet amsl, and blooms from January to June (CNPS 2014). Pygmy lotus occurs on rocky soils in pinyon and juniper woodland and Sonoran desert scrub. It has been documented within Imperial, Riverside and San Diego Counties. Additional records are known from Baja California (CNPS 2014). Non-native plants and habitat disturbance resulting from off-highway vehicles are threats to the species. The Project site is within the known geographic range of this species; there is a known occurrence approximately 1.5 miles east from the Project site (CDFW 2014a). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 90.6 acres of suitable habitat for pygmy lotus on the Project site.



DUDEK

8477

SOURCE: Bing 2014, USF S 2014

FIGURE 5

USFWS Critical Habitat

Jacumba Solar Project

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Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*)

Jacumba milk-vetch is a County List A and has a CRPR of 1B.2. This perennial herb is in the Fabaceae family, has been documented at elevations from 2,953 to 4,495 feet amsl, and blooms from April to June (CNPS 2014). Jacumba milk-vetch occurs on rocky soils in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, and valley and foothill grasslands. It has been documented within San Diego County and Baja California (CNPS 2014). Development in desert regions and introduction of non-native plant species are threats to the species. The Project site is within the known geographic range of this species; there is a known occurrence that is immediately adjacent to the northwest corner of the Project site (CDFW 2014a). This species was also observed during surveys for the ECO Substation Project (CPUC and BLM 2011). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present. Therefore, there is a high potential for this species to occur on site.

There are 217.7 acres of suitable habitat for Jacumba milk-vetch on the Project site.

Tecate tarplant (*Deinandra floribunda*)

Tecate tarplant is a County List A and has a CRPR of 1B.2. This annual herb is in the Asteraceae family, has been documented at elevations from 230 to 4,003 feet amsl, and blooms from August to October (CNPS 2014). Tecate tarplant occurs in chaparral and coastal scrub and is associated with drainages. It has been documented within San Diego County with additional records from Baja California (CNPS 2014). Development and grazing activities are threats to this species. The Project site is within the known geographic range of this species; there is a known occurrence approximately 1.8 miles west from the Project site (CDFW 2014a). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation and drainages present on site. Therefore, there is a high potential for this species to occur on site.

There are 186.9 acres of suitable habitat for tecate tarplant on the Project site.

Sticky geraea (*Geraea viscida*)

Sticky geraea is a County List B and has a CRPR of 2.3. This perennial herb is in the Asteraceae family, has been documented at elevations from 1,476 to 5,577 feet amsl, and blooms from May to July (CNPS 2014). Sticky geraea occurs in chaparral, often in disturbed areas. It has been documented within Imperial and San Diego Counties with additional records from Baja California (CNPS 2014). This species is threatened by increased development. The Project site is within the known geographic range of this species; there is a known occurrence approximately 1.3 miles north and 2 miles east from the Project site (CDFW 2014a). The species was also observed during the surveys for the ECO Substation (CPUC and BLM 2011). Additionally, the

Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 199.5 acres of suitable habitat for sticky geraea on the Project site.

Slender-leaved ipomopsis (*Ipomopsis tenuifolia*)

Slender-leaved ipomopsis is a County List B and has a CRPR of 2.3. This perennial herb is in the Polemoniaceae family, has been documented at elevations from 328 to 3,937 feet amsl, and blooms from March to May (CNPS 2014). Slender-leaved ipomopsis occurs in chaparral, pinyon and juniper woodland, Sonoran desert scrub with gravelly to rocky soils. It has been documented within Imperial and San Diego Counties with additional records from Baja California (CNPS 2014). The Project site is within the known geographic range of this species; there are known occurrences approximately 0.3 mile northwest and southeast from the Project site (CDFW 2014a). The species was also observed during the surveys for the ECO Substation (CPUC and BLM 2011). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 220.9 acres of suitable habitat for slender-leaved ipomopsis on the Project site.

Desert beauty (*Linanthus bellus*)

Desert beauty is a County List B and has a CRPR of 2.3. This annual herb is in the Polemoniaceae family, has been documented at elevations from 3,281 to 4,593 feet amsl, and blooms from April to May (CNPS 2014). Desert beauty occurs on sandy soils in chaparral. It has been documented within San Diego County with additional records from Baja California (CNPS 2014). Solar developments and off road vehicles as well as grazing are threats to this species. The Project site is within the known geographic range of this species; there is a known occurrence overlapping the Project site within the west-central portion (CDFW 2014a). This species was also observed during surveys for the ECO Substation (CPUC and BLM 2011). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a high potential for this species to occur on site.

There are 186.9 acres of suitable habitat for desert beauty on the Project site.

Mountain Springs bush lupine (*Lupinus excubitus* var. *medius*)

Mountain Springs bush lupine is a County List A and has a CRPR of 1B.3. This perennial herb is in the Fabaceae family, has been documented at elevations from 1,394 to 4,495 feet amsl, and blooms from March to May (CNPS 2014). Mountain Springs bush lupine occurs on in pinyon and juniper woodland and Sonoran desert scrub. It has been documented within Imperial and San

Diego Counties with additional records from Baja California (CNPS 2014). This species is threatened by off road vehicles. The Project site is within the known geographic range of this species; there is a known occurrence directly adjacent to the northwest corner of the Project site (CDFW 2014a). Approximately twenty additional occurrences are within 5 miles of the Project (CDFW 2014a). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 120.1 acres of suitable habitat for Mountain Springs bush lupine on the Project site.

Southern jewel-flower (*Streptanthus campestris*)

Southern jewel-flower is a County List A and has a CRPR of 1B.3. This perennial shrub is in the Brassicaceae family, has been documented at elevations from 2,953 to 7,546 feet amsl, and blooms from May to July (CNPS 2014). Southern jewel-flower occurs on rocky soils in chaparral, lower montane coniferous forest, and pinyon and juniper woodland. It has been documented within Imperial, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura Counties with additional records from Baja California (CNPS 2014). The Project site is within the known geographic range of this species; there is a known occurrence approximately 2 miles northeast and 4.8 miles northwest of the Project site (CDFW 2014a). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 217.7 acres of suitable habitat for southern jewel-flower on the Project site.

Parry's tetracoccus (*Tetracoccus dioicus*)

Parry's tetracoccus is a County List A and has a CRPR of 1B.2. This perennial deciduous shrub is in the Picrodendraceae family, has been documented at elevations from 541 to 3,281 feet amsl, and blooms from April to May (CNPS 2014). Parry's tetracoccus occurs in chaparral and coastal scrub. It has been documented within Orange, Riverside and San Diego Counties with additional records from Baja California (CNPS 2014). The Project site is within the known geographic range of this species; there is a known occurrence approximately 2.5 miles west of the Project site (CDFW 2014a). Additionally, the Project site is within the known elevational range of the species, and there is suitable vegetation present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 186.9 acres of suitable habitat for Parry's tetracoccus on the Project site.

1.4.5.3 County List C and D Species; Other

Plants categorized as County List C species are plants that may be rare, but more information is needed to determine their true rarity status. Plants categorized as County List D are of limited distribution and are uncommon, but not presently rare or endangered (County of San Diego 2010a). County List C and D species that have been identified as having a high potential to occur within the Proposed Project site are described as follows and included in Appendix C.

Fremont barberry (*Berberis fremontii*)

Fremont barberry is a County List C and has a CRPR of 2.3 species. It is a perennial evergreen shrub in the Berberidaceae family, and blooms from April to June. Fremont barberry has been documented at elevations from 2,756 to 6,070 feet amsl (CNPS 2014). This species occurs on rocky soils in chaparral, Joshua tree woodland, and pinyon and juniper woodland. In California, it has been documented in San Bernardino and San Diego with additional records outside of California. No threats to this species have been identified (CNPS 2014). Fremont barberry is known to occur approximately 1.8 and 3 miles west of the Project site (CDFW 2014a). Additionally, the Project site is in the known elevational range of the species, and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 217.7 acres of suitable habitat for Fremont barberry on the Project site.

Payson's jewel-flower (*Caulanthus simulans*)

Payson's jewel-flower is a County List D and has a CRPR of 4.2 species. It is an annual herb in the Brassicaceae family, and blooms from March to May. Payson's jewel-flower has been documented at elevations from 295 to 7,218 feet amsl (CNPS 2014). This species occurs on granitic soils in chaparral and coastal scrub. It has been documented in Riverside and San Diego Counties. No threats to this species have been identified (CNPS 2014). Payson's jewel-flower is known to occur approximately 6 miles west of the Project site (CDFW 2014a). Additionally, the Project site is in the known elevational range of the species, and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 186.9 acres of suitable habitat for Payson's jewel-flower on the Project site.

Colorado Desert larkspur (*Delphinium parishii* ssp. *subglobosum*)

Colorado Desert larkspur is a County List D and has a CRPR of 4.3 species. It is a perennial herb in the Ranunculaceae family, and blooms from March to June. Colorado Desert larkspur has been documented at elevations from 1,969 to 5,906 feet amsl (CNPS 2014). This species occurs

in chaparral cismontane woodland, pinyon and juniper woodland, and Sonoran desert scrub. It has been documented in Imperial, Riverside, and San Diego Counties with additional records in Baja California, Mexico. Non-native plants have been identified as a possible threat to this species (CNPS 2014). Colorado Desert larkspur is known to occur approximately 0.4 miles north and northwest of the Project site (Jepson Flora Project 2014). Additionally, the Project site is in the known elevational range of the species and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 307.0 acres of suitable habitat for Colorado Desert larkspur on the Project site.

Palmer's grapplinghook (*Harpagonella palmeri*)

Palmer's grapplinghook is a County List D and has a CRPR of 4.2 species. It is an annual herb in the Boraginaceae family, and blooms from March to May. Palmer's grapplinghook has been documented at elevations from 66 to 3,133 feet amsl (CNPS 2014). This species occurs on clay soils in chaparral, coastal scrub, and valley and foothill grassland. It has been documented in Los Angeles, Orange, Riverside, and San Diego Counties with additional records in Santa Catalina Island, Arizona, Baja California, and Sonora, Mexico. Development, agricultural activities and non-native species introduction are common threats to this species as well as it is an inconspicuous and easily overlooks species (CNPS 2014). Palmer's grapplinghook was observed during surveys for the ECO Substation project as well as being observed within the vicinity (Jepson Flora Project 2014; RBC 2009a; SDNHM 2014a). Additionally, the Project site is in the known elevational range of the species, and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 65.6 acres of suitable habitat for Palmer's grapplinghook on the Project site.

Pride-of-California (*Lathyrus splendens*)

Pride-of-California is a County List D and has a CRPR of 4.3 species. It is a perennial herb in the Fabaceae family, and blooms from March to July. Pride-of-California has been documented at elevations from 656 to 5,003 feet amsl (CNPS 2014). This species occurs in chaparral and has been documented in San Diego County with additional records in Baja California. No threats to this species have been identified (CNPS 2014). Pride-of-California was observed during surveys for the ECO Substation project (RBC 2009a). Additionally, the Project site is in the known elevational range of the species, and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 186.9 acres of suitable habitat for pride-of-California on the Project site.

Low bush monkeyflower (*Mimulus aurantiacus* var. *aridus*)

Low bush monkeyflower is a County List D and has a CRPR of 4.3 species. It is a perennial evergreen shrub in the Phrymaceae family, and blooms from April to July. Low bush monkeyflower has been documented at elevations from 2,461 to 3,937 feet amsl (CNPS 2014). This species occurs on rocky soils in chaparral and Sonoran desert scrub. It has been documented in Imperial and San Diego Counties with additional records in Baja California. This species is possibly threatened by off road vehicles (CNPS 2014). Low bush monkeyflower was observed during surveys for the ECO Substation project (CPUC and BLM 2011) and is known to occur within the vicinity (CDFW 2014a). Additionally, the Project site is in the known elevational range of the species, and suitable vegetation is present on site. Therefore, there is a moderate potential for this species to occur on site.

There are 186.9 acres of suitable habitat for pride-of-California on the Project site.

1.4.6 Special-Status Animal Species

Endangered, rare, or threatened wildlife species, as defined in CEQA Guidelines, Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" and, as used in this report, include (1) endangered or threatened wildlife species recognized in the context of the CESA and ESA; (2) California Species of Special Concern (SSC) and Watch List (WL) species, as designated by CDFW (2014c); (3) mammals and birds that are fully protected (FP) species, as described in Fish and Game Code, Sections 4700 and 3511; (4) Birds of Conservation Concern (BCC), as designated by USFWS (2008); and (5) wildlife species considered "sensitive" by the County of San Diego (County of San Diego 2010a, Table 3).

Five special-status wildlife species were detected within the Project area: Bell's sparrow, turkey vulture, California horned lark, loggerhead shrike, and San Diego black-tailed jackrabbit. Due to the high mobility of these species, not all observations were mapped. However, generally mapped special-status species points are depicted in Figure 4. These species are described in further detail below. A raptor survey and habitat assessment was conducted for the solar site in winter 2013/2014. Special-status wildlife species known to occur in the surrounding region and their potential to occur on site are presented in Appendices F and G. This list includes the potentially occurring special-status wildlife species provided by the County's pre-application meeting letter for the Proposed Project (County of San Diego 2014a), which was used as a reference document; Draft East County Plan – Species List (County of San Diego 2009); and wildlife species recorded in the Jacumba quadrangle and incorporating the surrounding six quadrangles (CDFW 2014a; USFWS 2014). The evaluation of each species' potential to occur

on site is based on the habitat present on site and Dudek's knowledge of biological resources of the area and regional distribution of each species.

1.4.6.1 Critical Habitat

USFWS-designated critical habitat for Peninsular bighorn sheep (*Ovis canadensis nelsoni*) and Quino checkerspot butterfly occurs within 5 miles of the Project area (USFWS 2014) (Figure 5), but no critical habitats for wildlife species occur on site.

1.4.6.2 County Group 1 Species

County Group 1 species that have been observed in the Project area, or have a high potential to occur, are described below and included in Appendix F and Appendix G. In addition, all federally or state-listed species identified in the County's Pre-Application Summary Letter (County of San Diego 2014a) are discussed as follows.

Birds

Sharp-shinned hawk (Accipiter striatus) – BCC/SSC/County Group 1

Sharp-shinned hawk is a BCC, SSC, and County Group 1 species. It is a fairly common migrant and winter resident throughout California. Nesting records for this species are poorly documented but it may nest south in Coast Ranges and at scattered locations in the Transverse and Peninsular Ranges (Zeiner et al. 1990a). This species breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats (with preferences towards riparian habitats). This species is also known to use all habitat types (except alpine, open prairie, and bare desert) in the winter. Sharp-shinned hawks forage on small birds, small mammals, insects, reptiles, and amphibians (Zeiner et al. 1990a). This species was observed during winter raptor surveys in December 2013 and January 2014; however, this species was not mapped. Although suitable foraging habitat is on site, no suitable nesting habitat occurs. Therefore, this species is not expected to nest in the Proposed Project area. Since this species is an aerial hunter (foraging on flying birds primarily) impacts to habitat is not expected to directly impact foraging habitat. Therefore, this species will not be analyzed for impacts to foraging habitat.

Cooper's hawk (*Accipiter cooperi*) – WL/County Group 1

Cooper's hawk is a WL and a County Group 1 species. It is found throughout California in wooded areas. It inhabits live oak, riparian, deciduous, or other forest habitats near water. Nesting and foraging usually occur near open water or riparian vegetation. Nests are built in dense stands with moderate crown depths, usually in second-growth conifer or deciduous

riparian areas. Cooper's hawks use patchy woodlands and edges with snags for perching while they are hunting for prey such as small birds, small mammals, reptiles, and amphibians within broken woodland and habitat edges (Zeiner et al. 1990a).

This species was not observed during biological surveys. There are CNDDB records for this species within the Live Oak Springs and Jacumba quadrangles (CDFW 2014a), approximately 3.5 miles west of the Project site (CPUC and BLM 2011), and elsewhere in the vicinity (SDNHM 2014b).

Within the Proposed Project area, there are no permanent water sources or nesting habitat (i.e., large trees) that would support nesting species. However, the Proposed Project area may support foraging opportunities within semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land. This species has a low potential to nest and high potential to forage in Proposed Project area.

Burrowing owl (*Athene cunicularia*) – BCC/SSC/County Group 1

This species has a moderate to low potential to burrow and winter within the Proposed Project; however, since focused surveys were conducted for this species, it is described here in more detail but is not included in the impacts analysis (which is focused on observed or high potential to occur species). The burrowing owl is a BCC, SSC, and County Group 1 species. It occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama (County of Riverside 2008a). The winter range is much the same as the breeding range, except that most burrowing owls apparently vacate the northern areas of the Great Plains and the Great Basin (County of Riverside 2008a) in winter. The majority of burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north during March and April, and into the first week of May. These individuals winter within the breeding habitat of more southern populations. Thus, winter observations may include both the migratory individuals as well as the resident population (County of Riverside 2008a). The burrowing owls in Northern California are believed to migrate (Coulombe 1971).

In California, burrowing owls are yearlong residents of flat, open, dry grassland and desert habitats at lower elevations (Bates 2006). They can inhabit annual and perennial grasslands and scrublands characterized by low-growing vegetation. They may be found in areas that include trees and shrubs if the cover is less than 30% (Bates 2006); however, they prefer treeless grasslands. Although burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been known to occupy fallow agriculture fields, golf courses, cemeteries, road allowances, airports, vacant lots in residential areas and university campuses, and fairgrounds

when nest burrows are present (Bates 2006; County of Riverside 2008a). They typically require burrows made by fossorial mammals, such as California ground squirrels.

No burrowing owl or sign was observed within the Proposed Project area during surveys. Although not recorded in the CNDDB 7-Quad Search, a single burrowing owl was observed foraging approximately 3.5 miles west of the Project site (CPUC and BLM 2011). Surveys also found three suitable burrowing locations (including one complex) on site (Figure 4). Suitable habitat within the Proposed Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Bell's sparrow (*Artemisiospiza belli*) – BCC/WL/County Group 1

The special-status nominate subspecies of Bell's sparrow (Bell's sage sparrow, *A. b. belli*) is a BCC, WL species, and County Group 1 species. It occurs as a nonmigratory resident on the western slope of the central Sierra Nevada Range, and in the coastal ranges of California, southward from Marin County and Trinity County, extending into north-central Baja California, Mexico (County of Riverside 2008b). The range of Bell's sparrow overlaps with that of at least one other subspecies of sage sparrow (County of Riverside 2008b).

Bell's sparrow occupies semi-open habitats with evenly spaced shrubs that are 3.3 to 6.6 feet high (County of Riverside 2008b). For site selection, specific shrub species may be less important than overall vertical structure, habitat patchiness, and vegetation density (Wiens and Rotenberry 1981). Bell's sparrow is uncommon to fairly common in dry chaparral and coastal sage scrub along the coastal lowlands, inland valleys, and lower foothills of the mountains within its range.

Bell's sparrow (*Artemisiospiza belli*) was observed on site during biological surveys, but its occurrence was not mapped. Within the Project study area, suitable foraging and nesting habitat includes semi-desert chaparral.

Golden eagle (*Aquila chrysaetos*) – BCC/WL; FP/County Group 1

Golden eagle is a BCC, WL, FP, and County Group 1 species, and is protected under the federal Bald and Golden Eagle Protection Act. It is a year-round, diurnally active species that is a permanent resident and migrant throughout California. The species is sparsely distributed throughout California, and it is found in Southern California occupying primarily mountain, foothill, and desert habitats. Golden eagles are more common in northeast California and the Coast Ranges than in Southern California and the deserts. Foraging habitat for this species is very broad and in California includes open habitats with scrub, grasslands, desert communities,

and agricultural areas. This species nests on cliffs within canyons and escarpments and in large trees (generally occurring in open habitats) and is primarily restricted to rugged, mountainous country (Garrett and Dunn 1981; Johnsgard 1990). Most nests are located on cliffs or trees near forest edges or in small stands near open fields (Kochert et al. 2002). Nest locations tend to be more closely associated with topographic heterogeneity than with a particular vegetation type (Call 1978).

Nest building can occur almost any time during the year, but breeding typically begins in January with nest building and egg laying occurring in February to March (Brown 1976; WRI 2010, as cited in CPUC and BLM 2011). Pairs may build more than one nest and attend them prior to laying eggs (Kochert et al. 2002). Each pair can have up to 10 nests, but only 2 to 3 are generally used in rotation from one year to the next. Some pairs use the same nest each year, while others use alternate nests year after year, and still others apparently nest only every other year. Succeeding generations of eagles may even use the same nest (Terres 1980, as cited in CPUC and BLM 2011). The hatching and feeding of the nestlings takes place from April through June. After fledging, the adult eagles continue to feed the young birds until late November (WRI 2010, as cited in CPUC and BLM 2011). As a result of the long breeding cycle, some pairs breed every other year even when food is abundant (WRI 2010, as cited in CPUC and BLM 2011). Other environmental conditions may also affect the breeding of eagles, including drought conditions that may affect prey populations. Currently, this region has been undergoing a prolonged drought, which has resulted in a reduced population size of jackrabbits, a primary prey source for golden eagles in this region (WRI 2010, as cited in CPUC and BLM 2011). As a correlate to the lower prey population size, Wildlife Research Institute (WRI) has confirmed unusually low reproductive levels of golden eagles in other regions of Southern California (WRI 2010, as cited in CPUC and BLM 2011).

There is no suitable nesting habitat within the Project area due to the lack of forested areas and cliffs. Based on the lack of observations of golden eagle during surveys, this species may not use the Project area regularly. There are no known nesting locations within 4,000 feet of the site within the United States, but golden eagles are known to historically nest directly north of the Project site (CDFW 2014a). CNDDB describes two occurrences within Table Mountain for this species. One occurrence is mapped approximately 1.4 miles north of the Project site where one fledged young was observed in 1977 in the southern section of Table Mountain (Occ. No. 211). The second occurrence is mapped approximately 2 miles north of the Project site where 2 nests and 3 other "inactive" nests were observed in the vicinity along the northern end of Table Mountain within rock outcrops. Additionally, this record documents 1 "fledged young" observed in 1976 and 2 "spotted eggs" observed at a nest in 2011 (Occ. No. 212). Within the Project area, suitable foraging habitat (approximately 304 acres) includes semi-desert chaparral, Sonoran mixed woodland scrub,

upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land. However, open habitats are more suitable for foraging than trees or denser habitats.

Golden eagle was not observed during biological surveys. However, it has been documented in the Carrizo Mountain, Jacumba, and Sombrero Peak quadrangles surrounding the Jacumba Solar Project area (CDFW 2014a) and there has been confirmed breeding north of the Project site (SDNHM 2014b). Golden eagle has a high potential to forage and is not expected to nest in the Proposed Project area or within 4,000 feet of the Project site.

There is existing data for the region available from the ECO EIR/EIS (CPUC and BLM 2011) and the Draft EIR for the Soitec Solar Development Project (County of San Diego 2014a).

Soitec Solar Development Project – Golden Eagle Surveys

In spring 2012, WRI conducted a golden eagle helicopter and ground survey within San Diego County, and in 2013 WRI prepared a golden eagle report for the Soitec Solar Development project, located approximately 10 miles west of the Proposed Project. In areas up to more than 15 miles from Soitec, WRI biologists documented six active golden eagle territories: Tecate East, Morena Butte, Glencliff, Thing Valley, Carrizo Gorge, and Table Mountain (WRI 2013, as cited in County of San Diego 2014b). The Table Mountain territory, which is an estimated area based on the location of their nest and associated foraging habitat, appears to include areas north of the Proposed Project site.

Tule Wind Project – Golden Eagle Surveys

In spring 2010, WRI conducted a golden eagle helicopter survey within a 10-mile radius of the proposed Tule Wind Project, located just north of the Project area. The 2010 survey for the Tule Wind Project found 10 golden eagle territories, 6 of which were active,[6] with 1 territory possibly active and the 3 remaining territories considered inactive. All of the 10 territories were documented to be active within the past 2 to 3 years. A total of 37 nests were recorded during the helicopter survey, 31 of which were considered golden eagle nests, many are alternative nesting sites for the same territory used in past years. Because the survey was conducted at the end of March, some of the eagle pairs may have already attempted and failed at nesting for the 2010 breeding season (WRI 2010, as cited in CPUC and BLM 2011). Every mountain range within the survey area, except for the Boundary Peak territory (approximately 2.5 miles to the east), has had

[6] Active territories were determined by the presence of active nests, which can be defined by either the presence of a golden eagle (e.g., an incubating female or a young bird), or evidence of new material having been added during the season in which the survey was conducted (WRI 2010).

recent nest evidence, but only six (possibly seven) territories showed evidence of 2010 activity. This is considered typical for breeding activity of this species, and golden eagles may average as few as 62% of the pairs breeding within any 1 year (Kochert et al. 2002, as cited in CPUC and BLM 2011).

Of the six active territories, three nests had golden eagles incubating eggs. The nests with incubating adults are generally described as the Canebrake, Moreno Butte, and Glenn Cliff/Buckman Springs locations.

In 2011, additional eagle observations were collected during bird use county surveys completed for the Tule Wind Project along the valley portion of the Project and the four closest territories: Table Mountain, Carrizo Gorge, Thing Valley, and Canebreak. Observations were made weekly during the breeding season. Based on these observations, Table Mountain is considered an occupied territory due to adult eagles flying in the area, but not active in 2011 since no nesting behavior was observed. The flight paths gathered during these observations demonstrate eagle use of the ridge line area of the Tule project and limited foraging in the McCain Valley.

Also in 2011, five satellite transmitters were attached to golden eagle nestlings to collect data about their movements upon fledging. These data indicate the following regarding golden eagle behavior. The Canebreak fledgling used the north end of the ridge and would overlap the northernmost ridge line turbines (Tule Wind Project). The O'Neil fledgling flew more than 20 miles from its nest, likely crossing the Tule Wind Project ridgeline turbines and the northern end of the valley turbines. The Glen Cliff fledgling flew up to the Project area and south of the Project, going distances that are long enough to ultimately cross over or through the Tule Wind Project area. Data provided to the agencies regarding the Moreno Butte fledglings indicate that the birds were in the initial fledgling period; therefore, they had not begun the expanding movement phase of fledging, and thus, the data did not provide any indication of their future use area.

Turkey vulture (*Cathartes aura*) – Group 1 species

Turkey vulture is not considered special status by any state or federal agencies; however, it is considered a Group 1 species by the County (County of San Diego 2010a). In California, it is common during the breeding season and is a yearlong resident west of the Sierra Nevada Mountains, especially in coastal areas. Summer and yearlong ranges also include the southeastern United States; portions of Texas, Mexico, Central America, and South America; and some islands in the Caribbean (Kirk and Mossman 1998).

Turkey vultures use a variety of habitats while foraging on both wild and domestic carrion. They prefer open stages of most habitats. In the western United States, they tend to occur regularly in

areas of hilly pastured rangeland, non-intensive agriculture, and areas with rock outcrops suitable for nesting, although they are not generally found in high-elevation mountain areas (Kirk and Mossman 1998; Zeiner et al. 1990a). Nest locations tend to be difficult to find and are usually located in a crevice among granite boulders (Unitt 2004). However, this species prefers hilly areas that provide deflective updrafts for flight and generally avoids extensive areas of row-crop farmland (Kirk and Mossman 1998).

Turkey vulture was observed foraging throughout the Project area during biological surveys, but the observations were not mapped. The Project area does not support suitable cliffs and large trees for nesting, but there is suitable foraging habitat within the Project area. Suitable foraging habitat includes most vegetation communities and undeveloped land cover on site (i.e., semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land). There are no CNDDB records within the 7-Quad Search. Although the species has been documented in the vicinity (SDNHM 2014b) turkey vulture breeding surrounding the Project area is poorly documented, and no nests have been recorded within the area (Unitt 2004).

Prairie falcon (*Falco mexicanus*) – BCC/WL/County Group 1

Prairie falcon is a USFWS BCC, WL, and County Group 1 species. The prairie falcon is a permanent resident found throughout most of California. It prefers chaparral, desert grasslands, and creosote bush habitats for foraging, and nests on cliffs or bluffs near these open habitats.

Prairie falcon was not observed during surveys. Although the Proposed Project site lacks suitable nesting habitat, such as cliffs, there is suitable foraging habitat. This species has been documented in the Carrizo Mountain, In-Ko-Pah Gorge, Jacumba, Live Oak Springs, Sombrero Peak, Sweeney Pass, and Tierra Del Sol quadrangles (CDFW 2014a) and in the vicinity (SDNHM 2014b).

Within the Project area, suitable foraging habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land. This species is not expected to nest within the Project area but has a high potential to forage.

Loggerhead shrike (*Lanius ludovicianus*) – BCC/SSC/County Group 1

Loggerhead shrike is a BCC, SSC, and County Group 1 species. It is found in lowlands and foothills throughout California, and it remains in the southern portion of the state year-round. Preferred habitats for the loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, or other structures that provide hunting perches with views of open

ground, as well as nearby spiny vegetation or built structures (such as the top of chain-link fences or barbed wire) that provide means to skewer prey items. The species occurs most frequently in riparian areas along the woodland edge, grasslands with sufficient perch and butcher sites, scrublands, and open-canopied woodlands, although they can be quite common in agricultural and grazing areas; and they can sometimes be found in mowed roadsides, cemeteries, and golf courses, although they occur rarely in heavily urbanized areas (Zeiner et al. 1990a). Loggerhead shrikes build nests in stable shrubs or trees requiring dense foliage for well-concealed nests.

Loggerhead shrike was observed on multiple occasions during biological surveys along the southwestern portion of the Project area (Figure 4), but not all observations were mapped. There are no CNDDB records for this species within the Project area or surrounding 7-Quad Search; however, the species is known to occur in the vicinity (SDNHM 2014b). Suitable nesting and perching habitat is present on site. Suitable foraging habitat in the Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land. Suitable nesting habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, and Peninsular juniper woodland and scrub.

Invertebrates

Quino checkerspot butterfly (*Euphydryas editha quino*) – FE/County Group 1

The Quino checkerspot butterfly is a federally endangered species found only in western Riverside County, southern San Diego County, and northern Baja California, Mexico (USFWS 2003). This species is found on sparsely vegetated hilltops, ridgelines, and occasionally on rocky outcrops in open chaparral and coastal sage scrub habitat (typically less than 3,000 feet in elevation). This species requires host plants within these vegetation communities for feeding and reproduction. The primary larval host plant is dwarf plantain (*Plantago erecta*); however, several other species have been documented as important larval host plants, including desert plantain, sometimes called woolly plantain (*P. patagonica*); thread-leaved bird's beak (*Cordylanthus rigidus*); white snapdragon (*Antirrhinum coulterianum*); owl's clover (*Castilleja exserta*); and Chinese houses (*Collinsia* spp.) (USFWS 2003). Nearly all areas except the urban/developed were surveyed during the protocol-level surveys. However, developed lands (i.e., Old Highway 80) traversing the Project site is not part of the Proposed Project.

No Quino checkerspot butterfly ~~adult nectar~~larval host plants were observed within the Proposed Project area. Protocol surveys were conducted in March and April 2013 (Appendix H). The surveys were negative for the species and host plants. This species is documented in the Jacumba, Live Oak Springs, Sombrero Peak and Tierra Del Sol quadrangles (CDFW

2014a; USFWS 2014) and ECO Substation approximately 3.5 miles west of the Project site (RBC 2009b, 2010). Based on the negative survey results, Quino checkerspot butterfly has a low potential to occur in the Project area.

1.4.6.3 County Group 2 Species

County Group 2 species that have been observed in the Project area, or have high potential to occur (Appendix F), are described below.

Reptiles

Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) – SSC/County Group 2

Belding's orange-throated whiptail is a CDFW SSC and County Group 2 species. Its current range includes southwestern California and Baja California, Mexico, from the southern edges of Orange County (Corona del Mar) and San Bernardino County (near Colton), southward to the Mexican border. This species is located on the coastal slope of the Peninsular Ranges and extends from near sea level to 3,412 feet (northeast of Aguanga, Riverside County) (Jennings and Hayes 1994). It commonly occurs in coastal sage scrub, chaparral, grassland, juniper, and oak woodland.

Although this species was recorded in the 7-Quad Search, there are no CNDDB records for this species within the Project area and Belding's orange-throated whiptail was not detected during surveys. However, there is suitable habitat on site, including termite sign observed on site. Additionally, this species was observed during surveys for the ECO Substation (CPUC and BLM 2011). Therefore, this species has high potential to occur. Within the Project area, suitable habitat includes semi-desert chaparral, Sonoran mixed woody scrub, Peninsular juniper woodland and scrub, and disturbed land.

Coastal whiptail (*Aspidoscelis tigris stejnegeri*) – County Group 2

Coastal whiptail is not considered special status by any state or federal agencies; however, it is a County Group 2 species. It is found in coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, north into Ventura County, and south into Baja California, Mexico (Lowe et al. 1970; Stebbins 2003).

Western whiptail (*A. tigris*) is found in a variety of habitats, primarily in areas where plants are sparse and there are open areas for running. According to Stebbins (2003), the species ranges from deserts to montane pine forests where it prefers warmer and drier areas. The species is also found in woodland and streamside growth, and it avoids dense grassland and thick shrub growth.

Coastal whiptail was not detected during surveys; however, there is suitable habitat, including rock outcroppings and termite food sources observed in the Project area, and it has high potential to occur. This species is recorded in CNDDB within the Live Oak Springs quadrangle. This species has a high potential to occur in the Proposed Project area. Within the Project area, suitable habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Northern red-diamond rattlesnake (*Crotalus ruber ruber*) – SSC/County Group 2

Northern red-diamond rattlesnake is a SSC and County Group 2 species. It is found in a variety of habitats from the coast to the deserts, from San Bernardino County into Baja California, Mexico (below 5,000 feet in elevation). It commonly occurs in rocky areas within coastal sage scrub, chaparral, juniper woodlands, and desert habitats, but can also be found in areas devoid of rocks (Lemm 2006).

Northern red-diamond rattlesnake was not observed during surveys, but there is suitable habitat in the vegetation communities with rocky outcroppings, and it has high potential to occur in the Project area. This species is recorded in CNDDB within the Jacumba, In-Ko-Pah Gorge, and Sweeney Pass quadrangles. Within the Project area suitable habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Rosy boa (*Lichanura trivirgata*) – County Group 2

Rosy boa is a County Group 2 species. The rosy boa in California ranges from Los Angeles, eastern Kern, and southern Inyo counties, and south through San Bernardino, Riverside, Orange, and Diego counties (Spiteri 1988; Stebbins 2003; Zeiner et al. 1990b). It occurs at elevations from sea level to 5,000 feet in the Peninsular and Transverse mountain ranges. Within its range in southern California, the rosy boa is absent only from the southeastern corner of California around the Salton Sea and the western and southern portions of Imperial County (Zeiner et al. 1990b). The rosy boa inhabits rocky shrubland and desert habitats, and is attracted to oases and streams, but does not require permanent water (Stebbins 2003).

Rosy boa was not observed during surveys, but there is suitable habitat in the vegetation communities with rocky outcroppings, and it has high potential to occur in the Project area. This species was recorded in the Live Oak Springs quadrangle (CDFW 2014a). Within the Project area suitable habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Blainville's horned lizard (*Phrynosoma blainvillii*) – SSC/County Group 2

Blainville's horned lizard (previously coast horned lizard) is a SSC and a County Group 2 species. It is found from the Sierra Nevada foothills and central California to coastal Southern California. It is often associated with coastal sage scrub, especially areas of level to gently sloping ground with well-drained loose or sandy soil, but it can also be found in annual grasslands, chaparral, oak woodland, riparian woodland, and coniferous forest between 30 and 7,030 feet amsl (Jennings and Hayes 1994). This reptile typically avoids dense vegetation, preferring 20% to 40% bare ground in its habitat. The Blainville's horned lizard can be locally abundant in areas where it occurs, with densities near 20 adults per acre. Adults are active from late March through late August, and young are active from August through November or December. Up to 90% of the diet of the Blainville's horned lizard consists of native harvester ants (*Pogonomyrmex* spp.).

Although not observed during biological surveys, this species is recorded in the CNDDB within the northern section of the solar Project site (CDFW 2014a; Figure 4) and Jacumba, Live Oak Springs, Sombrero Peak, and Tierra del Sol quadrangles (CDFW 2014a). In addition, the presence of harvester ants observed on site would provide a food source for this species.[7] This species has a high potential to occur in the Proposed Project area. Suitable habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Birds

California horned lark (*Eremophila alpestris actia*) – WL/County Group 2

California horned lark is a WL and County Group 2 species. The California horned lark is a permanent resident found throughout much of the southern half of California. This species breeds and resides in the coastal region of California from Sonoma County southeast to the U.S./Mexico border, including most of the San Joaquin Valley, and eastward to the foothills of the Sierra Nevada (Beason 1995; Grinnell and Miller 1944). It is found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above tree line. This species prefers open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, and fallow grain fields, and it nests on the ground in a hollow scrape.

This species was observed on site during biological surveys with several individuals generally occurring at mapped locations (Figure 4). However, due to the high mobility of this species not

[7] Harvester ants are a primary source of food for Blainville's horned lizards (Californiaherps.com 2014).

all observations were mapped. Although no CNDDB occurrences are recorded during the 7-Quad Search, this species has been documented within the vicinity (CPUC and BLM 2011; SDNHM 2014b). Since the Project area lacks suitable grassland nesting habitat for this species, it is expected that this species would only occur during the non-breeding season. Suitable wintering habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Western bluebird (*Sialia mexicana*) – County Group 2

Western bluebird is a County Group 2 species. They are common resident birds in San Diego County, where they prefer montane coniferous and oak woodlands (Unitt 2004). Because this species is not considered special-status by state or federal agencies, it is not tracked in CNDDB.

Western bluebirds were observed during surveys, but were not mapped. Although no suitable nesting habitat is present, suitable foraging habitat within the Proposed Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land

Barn owl (*Tyto alba*) – County Group 2

Barn owl is a not listed by federal or state agencies, but is a County Group 2 species. It is common throughout its range throughout most continents, and in the Americas, it occurs in much of continental United States, south through Central and South America to Tierra del Fuego (Marti et al. 2005).

In San Diego County, it is an uncommon permanent resident and occurs in urban settings, roosting in buildings, palm leaves, and nest boxes. Unitt (2004) considers this species uncommon in the Anza Borrego Desert region, and is found primarily in developed or agricultural areas, campgrounds, or other areas associated with human development. Nesting has been observed in the Borrego Valley and at Tamarisk Grove (Unitt 2004). Native fan palms, deeply eroded canyons, and other natural habitat types do not appear to be used by barn owls for nests.

Barn owls do not seem to exert specific habitat affinities, provided there are ample sites for nesting opportunities and adequate ground for hunting small mammals (Taylor 1994). Habitat types that are commonly used include open habitats such as grassland, chaparral, riparian, and other wetland types, from sea level to 1,680 meters (5,512 feet) amsl (Zeiner et al. 1990a).

This species was observed on site during wildlife surveys. Although there is suitable habitat for foraging, there are no trees (or similar structures) on site that would support nesting and nesting is not expected. Suitable foraging habitat within the Proposed Project area includes semi-desert

chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Mammals

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) – SSC/County Group 2

Northwestern San Diego pocket mouse is a SSC and County Group 2 species. This species occurs in coastal scrub, chaparral, grasslands, sagebrush, and similar habitats in western San Diego County. Micro habitat includes sandy, herbaceous areas, usually in association with rocks or coarse gravel (CDFW 2014a).

This species was not observed during wildlife surveys. Marginal records for this species are located in Jacumba, but site is located on range boundaries between this subspecies and the pallid San Diego pocket mouse (*C. f. pallidus*), which has the same SSC status and occurs on the eastern slope of the coast range mountains. In addition, this species was not recorded in the CNDDB 7-Quad Search. However, this species is determined to have a high potential to occur based on suitable habitat and range. Suitable habitat within the Proposed Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) – SSC/County Group 2

San Diego black-tailed jackrabbit is a SSC and County Group 2 species. It is confined to coastal Southern California, with marginal eastern records being Mount Piños, Arroyo Seco, Pasadena, San Felipe Valley, and Jacumba (Hall 1981). It is found in many diverse habitats, but primarily in arid regions supporting short-grass habitats. Jackrabbits typically are not found in high grass or dense brush where it is difficult for them to move quickly, and the openness of open scrub habitat likely is preferred over dense chaparral. Jackrabbits are common in grasslands that are overgrazed by cattle, and they are well adapted to using low-intensity agricultural habitats (Hall 1981).

This species was observed on multiple occasions during biological surveys (Figure 4). Due to the high mobility of this species on site, not all observations were mapped. This species is also documented in the Live Oak Springs quadrangle (CDFW 2014a) and in the vicinity (CPUC and BLM 2011). It can occur within a variety of shrub and woodland habitats within the Project area, including semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

San Diego desert woodrat (*Neotoma lepida intermedia*) – SSC/County Group 2

San Diego desert woodrat is a SSC and County Group 2 species. This species is found in coastal Southern California into Baja California, Mexico (Reid 2006). Marginal eastern records for the San Diego desert woodrat in the United States include San Luis Obispo, San Fernando in Los Angeles County, the San Bernardino Mountains and Redlands in San Bernardino County, and Julian in San Diego County (Hall 1981). Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.

This species is recorded by CNDDB in the In-Ko-Pah Gorge and Live Oak Springs quadrangles (CDFW 2014a). Within the Project area, the three woodrat middens were observed, indicating this species has potential to occur on site (Figure 4). Suitable habitat within the Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Mule deer (*Odocoileus hemionus*) – County Group 2

Mule deer is a County Group 2 species. It is a common species with a widespread distribution throughout the western United States and Canada and south into mainland and Baja California, Mexico (Hall 1981). It occurs throughout most of California, except in deserts and intensively farmed areas without cover (Zeiner et al. 1990c). Throughout its range, mule deer uses coniferous and deciduous forests, riparian habitats, desert shrub, coastal scrub, chaparral, and grasslands with shrubs. It is often associated with successional vegetation, especially near agricultural lands (NatureServe 2012). It uses forested cover for protection from the elements and open areas for feeding (Wilson and Ruff 1999). Mule deer fawn in a variety of habitats that have available water and abundant forage, including moderately dense shrubs and forests, dense herbaceous stands, and higher-elevation riparian and mountain shrub vegetation.

Although this species was not observed during biological surveys, the site contains suitable habitat and good connectivity to open space areas. Openings in the border fence (as described below) may facilitate movement to habitats south of the border. However, regular patrols may reduce the suitability of the habitat. Since this species is not considered special-status by state or federal agencies, it is not tracked in CNDDB. This species has a high potential to occur in the Proposed Project area. Suitable habitat in the Project area includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Mountain lion (*Puma concolor*) – County Group 2

The mountain lion is not considered special status by any state or federal agencies; however, it is considered a Group 2 species by the County of San Diego (2009) and is considered a Specially Protected Mammal under California Fish and Game Code Section 4800. Its range throughout California extends from deserts to humid forests in the Coast Ranges and from sea level to 3,050 meters (10,000 feet), but mountain lions do not inhabit xeric regions of the Mojave and Colorado deserts. They are most abundant in habitats that support their primary prey, mule deer, and their seasonal movements tend to follow migrating deer herds.

Mountain lions prefer habitats that provide cover, such as thickets in brush and timber in woodland vegetation (Zeiner et al. 1990c). They also use caves and other natural cavities for cover and breeding. They require extensive areas of riparian vegetation and brushy stages of various habitats, with interspersions of irregular terrain, rocky outcrops, and tree–brush edges. Although the Proposed Project area lacks riparian habitats, suitable rocky outcrops, irregular terrain, good connectivity to large open spaces, and openings in the fence border (as described below) may serve as suitable habitat to this species. This species has a high potential to move through the Proposed Project area, but the site is generally open and does not provide a lot of cover. Within the Proposed Project area, suitable habitat includes semi-desert chaparral, Sonoran mixed woodland scrub, upper Sonoran subshrub scrub, Peninsular juniper woodland and scrub, and disturbed land.

Invertebrates

Monarch (*Danaus plexippus*) – County Group 2

The monarch butterfly is not considered special status by any state or federal agencies; however, it is considered a Group 2 species by the County of San Diego (2009). This species follows a pattern of seasonal migration. The summer grounds of the species are found in New England, the Great Lakes region, and the northern Rocky Mountains. These areas are occupied from May through late August to mid-September (Urquhart 1987). The New England and Great Lakes populations migrate southwest to wintering grounds in the Sierra Madre mountain range of Mexico. The Rocky Mountains population migrates southwest to wintering grounds along the California coast.

The species' distribution is controlled by the distribution of its larval host plant (i.e., various milkweeds, genus *Asclepias*). Eggs are deposited and hatch on the underside of leaves of the milkweed plant. Upon hatching, the larvae feed upon the fine hairs on the leaves of the plant and stay on the same plant throughout its molting stages. After molting, the larvae leave the

milkweed and construct its chrysalis elsewhere. However, once an adult monarch butterfly emerges from the chrysalis, it soon returns to a milkweed plant for foraging and shelter (Urquhart 1987).

Monarch butterfly wintering sites are considered special status by CDFW (CDFW 2014a). Wintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast. A few California sites (e.g., Pacific Grove and Natural Bridges) support concentrated numbers of overwintering adults, but adults often winter as scattered individuals or in small clusters (Emmel and Emmel 1973). Sexually mature monarch butterflies mate along their northern migratory route (while returning to their summer grounds) and deposit eggs on milkweed plants. Adults die shortly after mating and laying eggs, leaving the completion of the northern migration to their offspring.

This species was observed once during biological surveys. However, no eucalyptus or pine groves occur within the Proposed Project area and the species is not recorded in CNDDB within the 7-Quad Search. In addition, no milkweed species were recorded on site. Therefore, this species is not expected to use resources present for foraging or wintering grounds.

1.4.7 Wetlands/Jurisdictional Waters

The results of the jurisdictional delineations conducted in 2013 and 2014, performed by Dudek, concluded there are non-wetland jurisdictional waters within the solar site and/or the gen-tie alignment site. Details regarding the findings from the formal jurisdictional delineations for the Proposed Project site are discussed below.

Potential Wetlands

No areas were mapped as potential wetlands within the Proposed Project site. Wetland hydrology indicators were not present (i.e., hydrophytic vegetation, hydric soils, or surface water).

RPO Wetland Determination

No areas were mapped as potential wetlands within the Proposed Project site. Wetland hydrology indicators, such as hydrophytic vegetation or undrained hydric soils, were not present. Therefore, no RPO wetlands were determined to occur within the Proposed Project site.

The County's scoping letter identified the Carrizo Wash on site (County of San Diego 2014b). The National Hydrographic Database flowlines (USGS 2014) and 7.5-minute USGS topographic map show a tributary to Carrizo Creek and unnamed stream channels on site; these were verified

during the jurisdictional delineation. A portion of the tributary to Carrizo Creek travels through the northern area of the Project site, north of Old Highway 80, and smaller drainages that flow through the Project site connect to this tributary approximately 1,100 feet northwest of the Project site. None of these demonstrated RPO wetland features.

Potential Non-Wetland Waters

The Proposed Project site was surveyed to determine the presence of potential waters of the United States and state. Non-wetland waters were mapped based on the presence of an ordinary high water mark (OHWM) along several potential drainage channels. An OHWM was identified along several ephemeral unvegetated stream channels based on an observed, defined bed and bank and other evidence of hydrology (Figure 4). According to the National Hydrographic Database, an unnamed stream/river flows along an east–west direction through the central portion of the solar site (USGS 2014). All drainages mapped within the Proposed Project site had a defined bed and bank, evidence of an OHWM, a channel bed of 1 to 17 feet wide, and were continuous for greater than 250 linear feet; thus, were determined to be jurisdictional non-wetland waters. Approximately 3.33 acres (24,361 linear feet) of potential jurisdictional waters of the United States/State were identified within the solar site, and 0.01 acre (84 linear feet) of potential jurisdictional waters of the United States/State were identified within the gen-tie alignment site. Flows within these drainages are directed northwest from the site and into a tributary to Carrizo Creek, which flows into Carrizo Creek, turns into Carrizo Wash, and connects San Felipe Wash and eventually the Salton Sea (USGS 2014; Figures 4 and 6) and therefore form a significant nexus to a traditional navigable "water of the United States." As stated above, these waters do not meet any one of the three criteria required to be considered a County RPO wetland. However, these non-wetland waters were determined to be under the potential combined jurisdiction of ACOE, RWQCB, and CDFW.

1.4.8 Habitat Connectivity and Wildlife Corridors

Wildlife corridors are defined as areas that connect suitable wildlife habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with vegetation cover, provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of wildlife from high-density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife corridors are considered sensitive by resource and conservation agencies. For the most part, the area in and around the Project area is very similar with regard to limited human disturbance and similar vegetation communities. Although rugged terrain generally surrounds the Project area to the north, east, and southwest, the area is not readily identifiable as a corridor per se, because wildlife movement is

not constrained or directed through the Project area. The Project area is, however, still included within a Core Wildlife Area due to its size and the undeveloped land in the surrounding area.

To satisfy habitat loss mitigation requirements for the development of solar facilities on this Project, the Applicant is proposing to balance development with on-site preservation of habitat, providing a contiguous block of habitat consisting of 180.4[8] acres of habitat of equivalent function or value in an Open Space Preserve (Appendix I; see Section 4.2.1 for figure description).

The Proposed Project vicinity is generally surrounded by undeveloped landscapes to the north, east, and west. Old Highway 80, a two-lane highway, traverses the Project site in a northeast–southwest direction along the northern portion of the Project site. There are no wildlife crossings along the highway, but wildlife are generally able to make at-grade crossings over the highway, particularly where terrain is not steep. Wildlife currently are able to traverse the Project site and surrounding undeveloped areas in an unencumbered manner until they arrive at the International border fence south of the site. The Project site is located near two breaks in the International border fence: two are located approximately 1,400 feet to the west and the other is located approximately 3,000 feet to the east (Figure 7). These breaks are due to the steep terrain and associated difficulties in building a fence in those areas. This topography does not pose difficulties for most wildlife use however. Mule deer, coyote, mountain lion, bobcat, and other species are readily able to scale steep slopes. Further, the Project site is situated adjacent to, or near, BLM holdings, which allows for unhindered movement.

The Peninsular Ranges are located east of the Project area. The Project site is located approximately 2.6 miles southeast of designated critical habitat for Peninsular bighorn sheep, and 1 mile from the western slope of the Peninsular Ranges (Figure 5). The Project site is likely too removed from mountainous terrain to be provide high-quality habitat attractive to bighorn sheep and also does not provide inter-mountain connectivity habitat between occupied mountain ranges and they have not been identified in the area previously. In addition, there are no water sources near the Project site that would attract bighorn sheep to the area. Based on their known range, USFWS Critical Habitat, and unsuitable habitat between the site and known range, this species is not expected to occur.

[8] Only considers habitat with equivalent function or value. An additional 3.1 acres are disturbed land (not included in open space acreage).

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SO RCE S Geological Survey National Hydrography Dataset SGS 01

FIGURE 6

Hydrologic Setting

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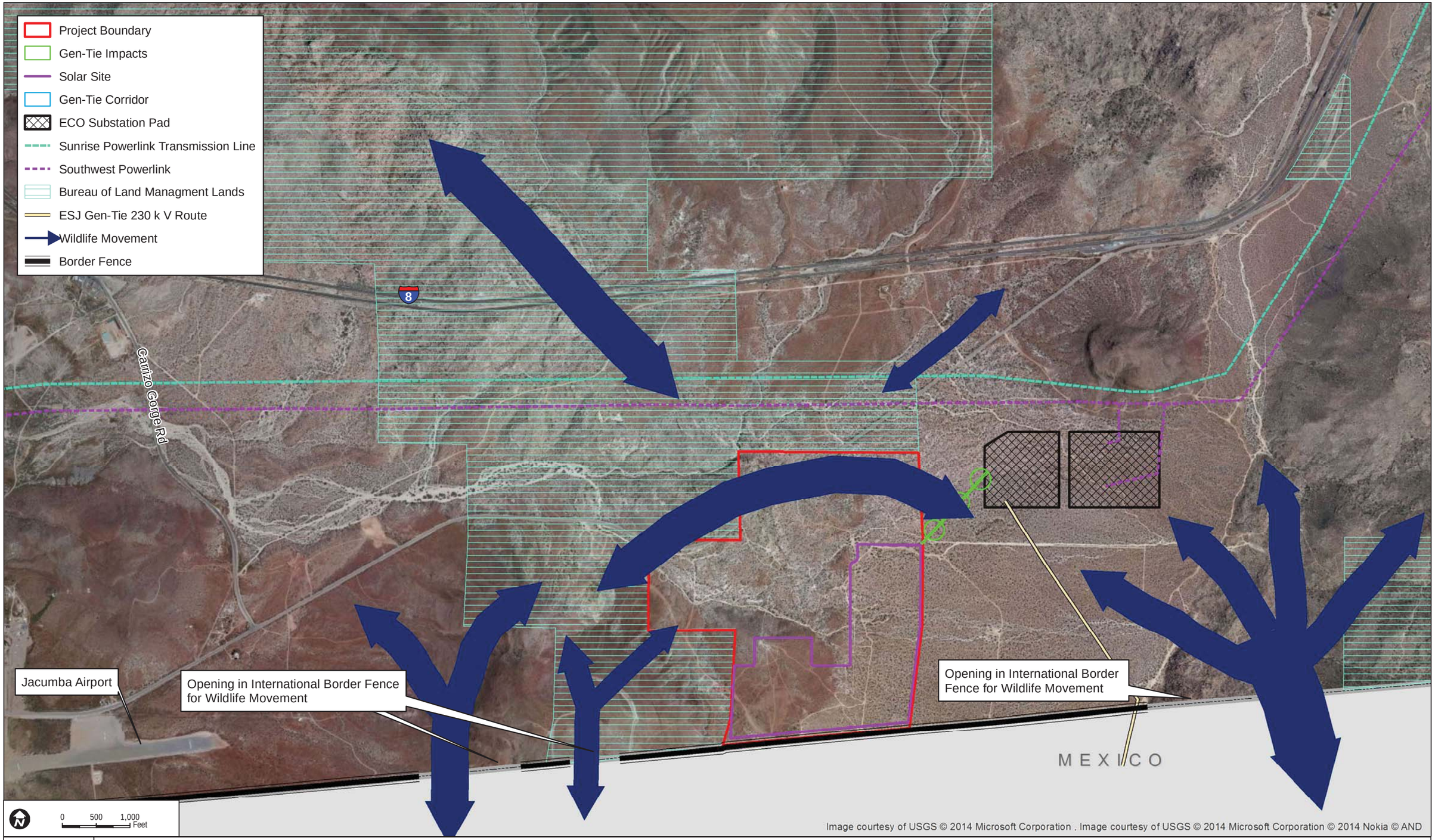

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SOURCE: Bing 201

FIGURE 7

Wildlife Corridor and Habitat Linkages

Jacumba Solar Project

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Sensitive habitat lands is a definition by the County (County of San Diego 2007) that includes wildlife corridors. The existing conditions are that the Project site is not likely to be part of a regional corridor or linkage for large mammals due to the lack of topography surrounding the site that would constrain wildlife to only traverse through the Project site. In addition, the International border fence that runs along the Project site is currently impermeable, such that wildlife movement between the United States and Mexico occurs only along breaks in the border fence east and west of the Proposed Project area. In addition, the Project is unlikely to serve as a local or regional wildlife corridor since wildlife is not constrained to travel through the area. Therefore, the Project site is not considered a sensitive habitat land with regard to wildlife corridors. Further, as shown in Figure 7, the solar Project is designed as a single contiguous development adjacent to the border fence along the southern and southeastern portions of the site. It is designed to be consistent with current wildlife movement constraints and movement areas, with the development proposed along the southern edge of the site where wildlife cannot currently move through due to the border fence. The Project design maintains a large contiguous block of habitat to be left in Open Space Preserve within a larger regional landscape where wildlife are more likely to move through. The Open Space Preserve is configured to compleiment the adjacent BLM lands to the north and west, and the configuration of the open space allows for continued utilization of the breaks in the border fence to the east and west by wildlife (Figures 3 and 7). It is expected that the configuration of the open space will allow for viable preservation of species and movement in the vicinity and region.

The Laguna Mountains are north of the Proposed Project area, and to the east, the Anza-Borrego Desert and the eastern slope of the Peninsular Range.

The Pacific Flyway is a major north–south migration route for birds that travel between North and South America. This is a broad-front route that covers much landscape. In Southern California, birds typically use the coast and inland areas. The Pacific Coast route is used by gulls, ducks, and other water birds. The longest and most important route of the Pacific Flyway is that originating in northeastern Alaska. This route, which includes most waterfowl and shorebirds, passes through the interior of Alaska and then branches such that large flights continue southeast into the Central and Mississippi flyways, or they may turn in a southwesterly direction and pass through the interior valleys of California, ending or passing through the Salton Sea (BirdNature 2014). The southward route of long-distance migratory land birds of the Pacific Flyway that typically overwinter south of the United States extends through the interior of California to the mouth of the Colorado River and on to their winter quarters, which may be located in western Mexico (USGS 2006).

The Salton Sea, approximately 40 miles northeast, is an important stopover for many birds that travel inland (SDG&E 2009); the inland Pacific Flyway migration route, which is focused on a

stopover at the Salton Sea, is east of the Project area. A study from 1985 to 1999 focused on shorebird migration and recorded avian use at the Salton Sea and adjacent Imperial Valley. Large numbers of shorebirds, including black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), western sandpiper (*Calidris mauri*), and dowitchers (*Limnodromus* spp.) were recorded during migration periods (Shuford et al. 2003). In addition, the study showed that birds traveling to the Salton Sea use the sea not only as a migratory stopover, but the site is also a wintering area for many species, including the mountain plover (*Charadrius montanus*) (Shuford et al. 2003). Migration timing varies from species to species, and for some, there is little documentation of the timing; for others, the arrival and departure has been well documented species by species (Unitt 2004). In general, bird migration occurs during the months of March through April and August through November. However, the Project area does not support any bodies of water or wetlands that attract large migration stopovers or attractants for avian and bat species. The closest large bodies of water to the Project site are Tule Lake, located approximately 7 miles northwest, and Lake Domingo, located approximately 8 miles west. Therefore, while birds likely migrate over the site and certain birds may forage on site, the Project site is not considered a stopover for birds migrating to and from the Salton Sea, particularly with the agricultural fields and irrigation resources available in the El Centro and Brawley areas south of the Salton Sea. Additionally, many birds are known to migrate at night (Emlen 1975; Lowery 1951; USGS 2013), which reduces visibility and glare-related impacts to migrants.

Certain types of solar panels may create a "pseudo-lake effect," and birds may collide with solar panels that appear like a body of water due to the sky's reflection. However, there is little scientific information available regarding the pseudo-lake effect, and a detailed discussion of the potential impacts would be speculative. Potential impacts associated with this effect are discussed in Section 2.4.2.

Special Habitat Management Areas

Several regional habitat management programs are planned for the eastern San Diego County, including an MSCP Framework Management Plan and an Eastern San Diego County Resource Management Plan (RMP). Conservation initiatives, including the Las Californias Binational Conservation Initiative and the Parque to Park Binational Corridor, include lands within the Project area (see Figure 10 of Conservation Biology Institute 2004).

The MSCP seeks to preserve the unique, native habitats and wildlife within San Diego County. The MSCP is a regional conservation effort that relies on multiple jurisdictions and agencies to ensure conservation goals and policies are implemented and successful. The MSCP includes

three subareas each containing a separate conservation plan: North County, South County, and East County. Only the South County MSCP Subarea Plan has been approved.

The Proposed Project is located within the draft ECMSCP Plan area (Figure 3). As described in Section 1.5.3, a Preliminary Planning Map has been completed. The intent of preparing the East County Plan is to create a large, connected preserve system that addresses the regional habitat needs for multiple species. Projects in this area are subject to the Planning Agreement for the ECMSCP (County of San Diego 2008) which is intended to establish if their approval would have an effect on the preparation and approval of the draft ECMSCP.

1.5 Applicable Regulations

1.5.1 Federal

The federal Endangered Species Act (FESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, is administered by the USFWS, National Oceanic and Atmospheric Administration, and National Marine Fisheries Service. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any listed species. "Take" is defined in Section 3(19) of FESA as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 U.S.C. 703 et seq.). Additionally, Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any Project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The Executive Order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

Pursuant to Section 404 of the Clean Water Act, ACOE regulates the discharge of dredged and/or fill material into "waters of the United States." The term "wetlands" (a subset of waters) is defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." In the

absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water mark," which is defined in 33 CFR 328.3(e).

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle are federally protected under the Bald and Golden Eagle Protection Act, passed in 1940 to protect the bald eagle and amended in 1962 to include the golden eagle (16 U.S.C. 668a–d). This act (16 U.S.C. 668–668d) prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by USFWS. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The act prohibits any form of possession or taking of both eagle species, and the statute imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses. Further, the act provides for the forfeiture of anything used to acquire eagles in violation of the statute. The statute exempts from its prohibitions on possession the use of eagles or eagle parts for exhibition, scientific, and Indian religious uses.

However, there is allowance within the act that, after investigation, the Secretary of the Interior may determine that direct and purposeful taking is compatible with the preservation of the bald eagle or the golden eagle. If so, then the Secretary may permit the taking, possession, and transportation of specimens for the scientific or exhibition purposes of public museums, scientific societies, and zoological parks, or for the religious purposes of Indian tribes. The Secretary may also determine that it is necessary to permit the taking of eagles for the protection of wildlife or of agricultural or other interests in any particular locality. This permitting may be for the seasonal protection of domesticated flocks and herds, and may also permit the taking, possession, and transportation of golden eagles for the purposes of falconry if the eagles may cause depredations on livestock or wildlife. Finally, the Secretary of the Interior may permit the taking of golden eagle nests that interfere with resource development or recovery operations, or in an emergency.

In November 2009, USFWS published the Final Eagle Permit Rule (74 FR 46836–46879) providing a mechanism to permit and allow for incidental (i.e., non-purposeful) take of bald and golden eagles pursuant to the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Disturb means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior." These regulations may apply to projects such as wind turbines and transmission lines, and were followed by issuance of guidance documents for inventory and monitoring protocols and for avian protection plans (Pagel et al. 2010). In February 2011, the

USFWS released Draft Eagle Conservation Plan Guidance aimed at clarifying expectations for acquiring take permits acquisition by wind power projects consistent with the 2009 rule.

1.5.2 State

The CDFW administers CESA (California Fish and Game Code, Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of California. Under CESA Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

According to Sections 3511 and 4700 of the Fish and Game Code, which regulate birds and mammals, respectively, a "fully protected" species may not be taken or possessed without a permit from the Fish and Game Commission, and "incidental takes" of these species are not authorized.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (Fish and Game Code, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

Pursuant to Section 1602 of the Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement is required for impacts to jurisdictional wetlands in accordance with Section 1602 of the California Fish and Game Code.

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the SWRCB develops statewide water quality plans, and the RWQCB develops basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under the Porter-Cologne Water Quality Control Act include isolated waters that are no longer regulated by the ACOE. Developments with impact to jurisdictional waters must

demonstrate compliance with the goals of the act by developing Stormwater Pollution Prevention Plans (SWPPPs), Standard Urban Storm Water Mitigation Plans, and other measures to obtain a Clean Water Act Section 401 certification.

CEQA requires identification of a project's potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guideline 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" (14 CCR 15000 et seq.). A rare animal or plant is defined in guideline 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guideline 15380(c). CEQA also requires identification of a project's potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

1.5.3 County

The RPO, administered by the County, regulates biological and other natural resources within the County. These resources include wetlands, wetland buffers, floodways, floodplain fringe, steep slope lands, sensitive habitat lands, and significant prehistoric or historic sites. Generally, the ordinance stipulates that no impacts may occur to wetlands except for scientific research, removal of diseased or invasive exotic plant species, wetland creation and habitat restoration, revegetation and management projects, and crossings of wetlands for roads, driveways, or trails/pathways when certain conditions are met. The same exemptions apply to impacts to wetland buffer areas and improvements necessary to protect adjacent wetlands. Sensitive habitat lands include unique vegetation communities, lands that support endangered species, and lands that are essential to the healthy functioning of a balanced natural ecosystem, including wildlife corridors. Impacts to sensitive habitat lands are permitted when impacts have been reduced as much as possible and mitigation provides at least an equal benefit to the affected species (County of San Diego 2007). No unique vegetation communities or endangered species occur on site, and the Project site is not considered a wildlife corridor, as described further in Section 1.4.8; therefore, the Project site does not contain sensitive habitat lands.

2 PROJECT EFFECTS

2.1 Definition of Impacts

This section defines the types of impacts considered in this report to analyze the potential effects of the Proposed Project on biological resources. These impacts are discussed in more detail as follows.

Direct impacts refer to 100% permanent loss of a biological resource. For purposes of this report, it refers to the limits of grading within the permanent fencing for the solar site, the access road, and fuel modification (i.e., Development Footprint). For the gen-tie alignment, direct impacts include areas of vegetation removal and maintenance within 150 feet of each pole. Temporary direct impacts refer to some areas where grading will occur outside of the fence and some areas associated with the gen-tie alignment. Direct impacts were quantified by overlaying the Project data layers on geographic information system (GIS)-located biological resources (Figure 8).

Indirect impacts are reasonably foreseeable effects caused by Project implementation on remaining or adjacent biological resources outside the direct limits of grading. Indirect impacts may affect areas within the defined Project area but outside the limits of grading, including non-impacted areas and areas outside the Project area, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to long-term maintenance of the solar panels. In most cases, indirect effects are not quantified, but in some cases quantification might be included, such as using a noise contour to quantify indirect impacts to nesting birds.

Cumulative impacts refer to the combined environmental effects of the Proposed Project and other relevant projects. In some cases, the impact from a single project may not be significant, but when combined with other projects, the cumulative impact may be significant. This report does not include analysis of cumulative impacts; this analysis is being prepared separately for direct inclusion in the CEQA document being prepared for the Project.

Following the County Guidelines (County of San Diego 2010a, 2010b), areas that are not being directly impacted but cannot be counted toward mitigation will be considered "impact neutral"; these areas include the isolated section of undeveloped land between the International border fence and the southern boundary of the Project area.

2.2 Vegetation Communities/Land Covers

2.2.1 Direct Impacts to Vegetation Communities/Land Covers

2.2.1.1 Temporary Direct Impacts

Short-term, construction-related, or temporary direct impacts to vegetation communities would primarily result from construction activities, including temporary grading along the solar Project boundary and gen-tie alignment. Clearing, trampling, or grading of vegetation outside designated construction zones could occur in the absence of avoidance and mitigation measures. These potential effects could damage vegetation communities and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

Within the Proposed Project area, temporary impacts are associated with the gen-tie site and grading along the perimeter of the solar site (Figure 8). Temporary impacts are described in Table 4.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.2.1.2 Permanent Direct Impacts

Direct impacts to vegetation communities would occur as a result of solar grading activities, constructing an access road to the solar site, and clearing vegetation around gen-tie alignment poles (Figure 8). Table 4 shows the acreage of direct impacts to vegetation communities in the Project area as a result of these activities (Figure 8). The significance determination for these impacts is determined through application of the County Significance Guidelines described in Section 4.

Table 4
Direct Impacts to Habitat Types/Vegetation Communities

Habitat Types/Vegetation Communities	Existing Acreage (Acres)		Development Footprint (Acres)				Impact Neutral	Open Space
	Jacumba Solar	*Gen-Tie*	*Temporary Impacts*	*Access Road/Limits of Grading (Solar Site)*	*Fuel Modification Zone*	*Gen-Tie*		
Upland Scrub and Chaparral								
Semi-desert chaparral[1]	179.4	0.1	0.7	73.6	1.2	0.1	2.7	101.2
Sonoran mixed woody scrub[1]	3.2	—	—	3.2	—	—	—	—
Upper Sonoran subshrub scrub[1]	3.6	—	—	2.8	0.2	—	0.6	—
Subtotal	*186.2*	*0.1*	*0.7*	*79.6*	*1.4*	*0.1*	*3.3*	*101.2*

Table 4
Direct Impacts to Habitat Types/Vegetation Communities

Habitat Types/Vegetation Communities	Existing Acreage (Acres)		Development Footprint (Acres)				Impact Neutral	Open Space
	Jacumba Solar	*Gen-Tie*	*Temporary Impacts*	*Access Road/Limits of Grading (Solar Site)*	*Fuel Modification Zone*	*Gen-Tie*		
Woodland								
Peninsular juniper woodland and scrub[1]	98.3	3.3	0.2	18.9	—	3.3	—	79.2
Subtotal	*98.3*	*3.3*	0.2	*18.9*	—	*3.3*	—	—
Non-Native Communities and Land Covers								
Disturbed land[1]	13.1	—	—	8.2	0.1	—	1.7	3.1
Subtotal	*13.1*	—	—	*8.5*	*0.1*	—	*1.7*	*3.1*
Total[2]	**297.5**	**3.4**	**0.9**	**106.7**	**1.5**	**3.4**	**5.1**	**183.5**

1 Vegetation community is considered special status by the County and requires mitigation (County of San Diego 2010a).
2 Totals may not add due to rounding.

2.2.2 Indirect Impacts to Vegetation Communities

2.2.2.1 Temporary Indirect Impacts

Potential short-term or temporary indirect impacts to special-status vegetation communities in the Project area would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all the special-status vegetation communities that occur within the Project area are described in detail as follows.

Generation of Fugitive Dust. Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

Changes in Hydrology. Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. Hydrologic alterations include changes in flow rates and patterns in streams and rivers, which may affect adjacent and downstream vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, increased turbidity, and excessive sedimentation. Direct impacts, as described previously, can

also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Chemical Pollutants. Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants. No herbicides will be used during construction.

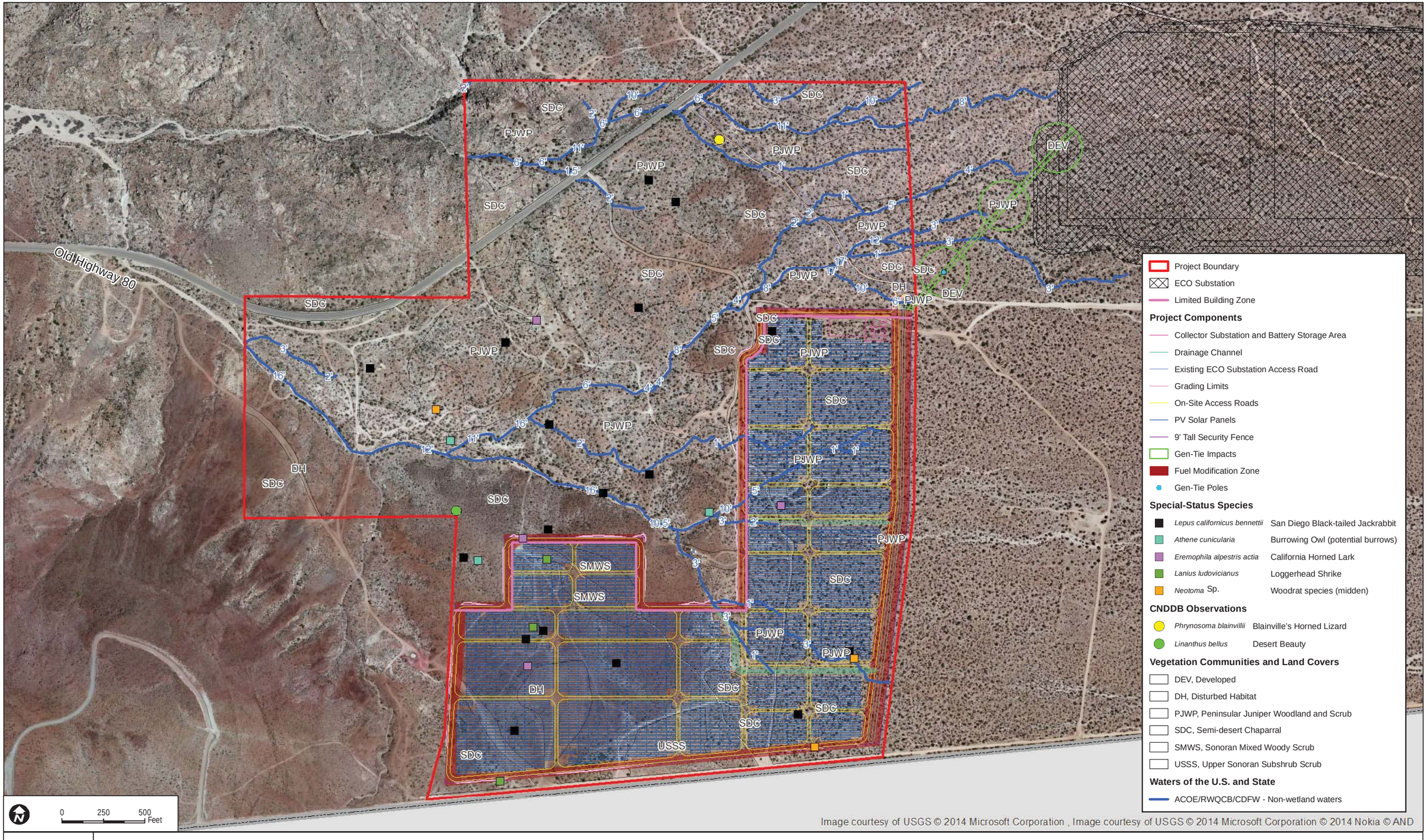
The significance of these potential impacts is determined through application of the County Significance Guidelines described in Section 4.

2.2.2.2 Permanent Indirect Impacts

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the Proposed Project to special-status vegetation communities after construction, including impacts related to operation and maintenance. Operation and maintenance activities will occur within the impact footprint. Permanent indirect impacts that could affect special-status vegetation communities include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, alteration of the natural fire regime, and shading. Each of these potential indirect impacts is discussed as follows.

Generation of Fugitive Dust. The effects of fugitive dust on special-status vegetation communities would be the same as the temporary indirect impacts described in Section 2.2.2.1.

Habitat Fragmentation. Habitat fragmentation and isolation of plant populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes; and insularization of local populations, which affects dispersal rates (Wilcove et al. 1986; Wilcox and Murphy 1985). Although these effects are more readily observable in wildlife, there are potential ecological effects, such as changes in pollinator populations, that can result in altered plant community composition and thus adversely affect special-status vegetation communities.



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SOURCE: Bing 2014, SanGIS 201

FIGURE 8

Impacts to Biological Resources

Jacumba Solar Project

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Chemical Pollutants. The effects of chemical pollutants on special-status vegetation communities would be the same as the temporary indirect impacts described in Section 2.2.2.1. During operation and maintenance, herbicides may be used to prevent vegetation from reoccurring around structures. However, weed control treatments shall include all legally permitted chemical, manual, and mechanical methods applied with the authorization of the San Diego County agriculture commissioner. Additionally, the herbicides used during operation and maintenance activities will be contained within the Proposed Project impact footprint.

Altered Hydrology. Water would be used for operational purposes for cleaning the solar modules and for reapplication of the nontoxic permeable soils stabilizers that may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status vegetation communities. Altered hydrology can allow for the establishment of non-native plants and/or invasion by Argentine ants (*Linepithema humile*), which can compete with native ant species that could be seed dispersers or plant pollinators. However, the water, and associated runoff, used during operation and maintenance activities will be contained within the Proposed Project impact footprint, and long-term indirect impacts associated with altered hydrology are not expected. Potential impacts would be reduced by design features that (i) contain operational water use, and associated runoff, within the Proposed Project impact footprint (ii) specify installation of drip-irrigated landscaping for the Proposed Project, and (iii) ensure that landscape stock has been fumigated against ant infestation prior to transport to the Project site.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and unique vegetation communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within special-status vegetation communities.

Increased Human Activity. Increased human activity could result in the potential for trampling of vegetation outside of the impacts footprint, as well as soil compaction, and could affect the viability of plant communities. Trampling can alter the ecosystem, creating gaps in vegetation and allowing exotic, non-native plant species to become established, leading to soil erosion. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture,

water penetration pathways, surface flows, and erosion. An increased human population increases the risk for damage to special-status vegetation communities.

Alteration of the Natural Fire Regime. The Proposed Project could potentially increase the risk of fire, including but not limited to fire associated with electrical shorts or electrical equipment malfunction. Shorter-than-natural fire return intervals can preclude recovery of the native vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and in some cases, result in permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Keeley 1987; Malanson and O'Leary 1982; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation.

Shading. The Proposed Project includes construction of individual racks (solar PV support structures) that would be mounted on a steel mast (steel pole or beam foundation). The racking system would maintain orientation toward the sun during the day and at night the racks would be positioned horizontally. Shading can reduce the amount of sunlight available for photosynthesis, eliminating longer wavelengths of the visible light spectrum, and can reduce transpiration due to reduced photosynthetic rates, increasing soil moisture and resulting in changes to soil nutrient availability and microbial communities, potentially favoring non-native species and other shade-tolerant plants. However, shading will be contained within the Proposed Project impact footprint, and long-term indirect impacts associated with shading outside of the impact footprint are not expected.

The significance of these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.3 Special-Status Plant Species

2.3.1 Direct Impacts to Special-Status Plant Species

2.3.1.1 Temporary Direct Impacts

Short-term, construction-related, or temporary direct impacts to special-status plants would primarily result from construction activities, and are the same as those described for vegetation communities/land covers in Section 2.2.1. There would be potential temporary direct impacts to suitable habitat identified for special-status plant species with a moderate or high potential to occur on site (Appendix C). Suitable habitat for the 14 special-status plant species includes semi-desert chaparral, Peninsular juniper woodland and scrub, Sonoran mixed woody scrub, and

disturbed lands, and totals 304 acres; 0.9 acre (0.3%) would be temporarily impacted. The significance of these potential impacts is determined through application of the County Significance Guidelines, as described in Section 3.

2.3.1.2 Permanent Direct Impacts

Suitable habitat for the 14 special-status plant species includes semi-desert chaparral, Peninsular juniper woodland and scrub, Sonoran mixed woody scrub, and disturbed lands. Implementation of the Proposed Project would result in direct, permanent impacts to 108.6 acres (or 36%) of the on-site suitable habitat[9] for the 14 special-status plant species with a moderate or high potential to occur on site (see Appendix C). The significance of these potential impacts is determined through application of the County Significance Guidelines as described in Section 3.

2.3.2 Indirect Impacts to Special-Status Plant Species

2.3.2.1 Temporary Indirect Impacts

Potential short-term or temporary indirect impacts to special-status plant species on the Project site are the same as those described for vegetation communities/land covers in Section 2.2.2. These include generation of fugitive dust, changes in hydrology, and introduction of chemical pollutants (including herbicides). All special-status plant species on site could be impacted by potential temporary indirect impacts such as those previously listed.

2.3.2.2 Permanent Indirect Impacts

Long-term (operation-related) or permanent indirect impacts that could result from the proximity of the Proposed Project to special-status plants after construction are the same as those described for vegetation communities/land covers in Section 2.2.2, and include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, alteration of the natural fire regime, and shading. Each of these potential indirect impacts is discussed below.

The significance of these potential impacts is determined through application of the County Significance Guidelines, as described in Section 3.

[9] Does not include upper Sonoran subshrub scrub because these habitats were not suitable for special-status plant species.

2.4 Special-Status Wildlife Species

2.4.1 Direct Impacts to Special-Status Wildlife Species

2.4.1.1 Temporary Direct Impacts

Short-term, construction-related, or temporary direct impacts to special-status wildlife species would primarily result from construction activities, and are the same as those described for vegetation communities/land covers in Section 2.2.1. Potential temporary direct impacts to suitable habitat for special-status wildlife species on site would be significant. The significance of these potential impacts is determined through application of the County Significance Guidelines, as described in Section 3.

2.4.1.2 Permanent Direct Impacts

Long-term or permanent direct impacts to special-status wildlife species were quantified by comparing the impact footprint with suitable habitat for wildlife species. The significance of these potential impacts is determined through application of the County Significance Guidelines, as described in Section 3.

Within the Proposed Project area there is no suitable nesting habitat for golden eagles or other special-status raptors. The gen-tie alignment is linear, approximately 1,500 feet, and would consist of ~~two or~~approximately three steel transmission poles. The gen-tie alignment is primarily composed of good quality foraging habitat. Provided that the gen-tie alignment will be relatively short (relative to other similar Projects in the vicinity, see CPUC and BLM 2011) and given that there is a planned Open Space Preserve on site, there is not expected to be a substantial loss of foraging habitat. Therefore, foraging within the area is not expected to be affected due to the presence of the overhead lines or transmission poles. However, loss of an individual bird could occur if a bird were to make contact with two separate energized lines. Protections will be in place to ensure that this will not occur. These protections will be in conformance with the Avian Power Line Interaction Committee (APLIC) standards and may include: guidance on proper pole and crossmember dimensions, phasing, and insulator design, dimensions to preclude wire to wire contact, and bird diverters or other means to make lines more visible to birds will be installed to help avoid collisions.

No helicopters are planned for use to install poles. Therefore, there are no anticipated impacts based on helicopter presence or noise.

2.4.1.2.1 County Group 1 Species

The information provided in this section discusses the potential effects for County Group 1 species. The significance determination for these potential impacts is determined through application of the County Significance Guidelines as described in Section 3. More detailed information about observation of the species or its potential to occur within the Proposed Project site, suitable habitat, and range is provided in Section 1.4.6.2.

Cooper's hawk (*Accipiter cooperi*)

Cooper's hawk was not observed in the Project area and not expected to nest on site. However, this species has potential to use the Project area for foraging. Within the Project site, there would be direct impacts to approximately 111.5 acres of suitable foraging habitat as a result of the Proposed Project.

Bell's sparrow (*Artemisiospiza belli*)

Bell's sparrow (*Artemisiospiza belli*) was observed in the Project area. Within the Proposed Project site, there would be direct impacts to approximately 74.9 acres of suitable habitat. Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities.

Golden eagle (*Aquila chrysaetos*)

Golden eagle has no suitable nesting habitat within the Project area due to the lack of forested areas and cliffs so no construction related impacts are anticipated. Based on the lack of observations of golden eagle during surveys, this species likely does not use the Project area regularly. Because a majority of the site is covered by sparse shrubs and open desert habitat, the foraging habitat quality is considered to be moderate to high. Within the Proposed Project site, there would be direct impacts to approximately 111.5 acres of suitable foraging habitat.

The Project site is primarily composed of good quality foraging habitat due to the sparse shrubs and open desert habitat. There are no nests within 4,000 feet of the Proposed Project site, and with the incorporation of measures such as APLIC standards for the gen-tie lines, no impacts associated with the gen-tie line are anticipated.

Turkey vulture (*Cathartes aura*)

Turkey vulture was observed in the Project area, but the observation locations were not recorded. The Project area does not support suitable cliffs and large trees for nesting, but there is suitable foraging habitat within the Project area. Within the Proposed Project site, there would be

direct impacts to approximately 111.5 acres of suitable foraging habitat as a result of the Proposed Project.

Because turkey vulture is not expected to roost or nest in the Project area, no loss of individual birds as a result of construction-related impacts are anticipated.

Prairie falcon (*Falco mexicanus*)

Prairie falcon was not observed in the Project area. There is no suitable nesting habitat in the Project area, but this species could forage in the Project area. Within the Proposed Project site, there would be direct impacts to approximately 111.5 acres of suitable foraging habitat as a result of the Proposed Project.

Because prairie falcon is not expected to nest in the Project area, no loss of individual birds as a result of construction-related impacts are anticipated.

Loggerhead shrike (*Lanius ludovicianus*)

Loggerhead shrike was observed within the southwestern portion of the Project area. Within the Proposed Project site, there would be direct impacts to approximately 111.5 acres of suitable foraging habitat and 100.3 acres of suitable nesting habitat as a result of the Proposed Project. Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities.

Invertebrates

Quino checkerspot butterfly (*Euphydryas editha quino*)

Focused surveys for Quino checkerspot butterfly were conducted for both the Proposed Project site and the gen-tie alignment. Thirty-one person-days were spent conducting these surveys, and no Quino checkerspot butterflies were observed (Appendix H). The nearest observation for Quino checkerspot butterfly is located approximately 3.5 miles east of the Project area (RBC 2009b, 2010). Based on the lack of observations of this species during focused surveys, no presence of host plants, and the lack of records in the Project area, it is not expected to occur within the Project area.

2.4.1.2.2 County Group 2 Species

County Group 2 species that have been observed in the Project area, or have high potential to occur (Appendix F), are described below.

Special-Status Amphibians and Reptiles

Blainville's horned lizard, Belding's orange-throated whiptail, coastal whiptail, northern red diamond rattlesnake, and rosy boa were not observed; however, these species have a high potential to occur within the Project area due to the presence of suitable habitat. No amphibians have high potential to occur on site. Reptiles are considered low-mobility species, and direct impacts to these species could occur as a result of the grading activities and activities within the fire buffer.

Special-Status Birds

California horned lark, western bluebird, and barn owl have been observed within the Project area. There would be direct impacts to suitable habitat for this species. Construction-related impacts could result in the loss of active nests and/or young during vegetation clearing activities.

Special-Status Mammals

San Diego black-tailed jackrabbit have been observed in the Project area. Desert woodrat (middens) were mapped in several areas and may be San Diego desert woodrat. Mule deer and mountain lion were not observed; however, these species have a high potential to occur within the Project area due to the presence of suitable habitat. There are direct impacts to suitable habitat for these species.

Construction-related impacts to mule deer and mountain lion are not anticipated because this species is highly mobile and can use a variety of habitats in the Project area.

Special-Status Invertebrates

Monarch butterfly has been observed within the Project area. Based on the lack of records of this species in the vicinity, no observations of foraging or larvae host plants (i.e., milkweeds) on site, and the lack of wintering habitat in the Project area (i.e., eucalyptus or pine groves), it is not expected to occur as an overwintering population within the Project area.

2.4.2 Indirect Impacts to Special-Status Wildlife Species

2.4.2.1 Temporary Indirect Impacts

Short-term, construction-related, or temporary indirect impacts to special-status wildlife species would primarily result from construction activities. Potential temporary indirect impacts could occur as a result of generation of fugitive dust, noise, chemical pollutants, increased human activity, and non-native animal species during construction.

Generation of Fugitive Dust. Dust and applications for fugitive dust control can impact vegetation surrounding the limits of grading, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species.

Noise. Construction-related noise could occur from equipment used during vegetation clearing and construction of the solar panels and associated infrastructure. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, as cited in Lovich and Ennen 2011).

Chemical Pollutants. Accidental spills of hazardous chemicals could contaminate nearby surface waters and groundwater and indirectly impact wildlife species through poisoning or altering suitable habitat. Use of pesticides for rodent control could directly or indirectly affect wildlife species, such as raptors that prey on small mammals.

Increased Human Activity. Construction activities can deter wildlife from using habitat areas near the Proposed Project footprint and increase the potential for vehicle collisions.

Non-Native Animal Species. Trash from construction-related activities could attract invasive predators such as ravens and coyotes that could impact the wildlife species in the Project area. Landscaping stock could bring in Argentinean ants or other pests that could compete with native wildlife.

All special-status wildlife species on site could be impacted by potential temporary indirect impacts such as those previously listed. The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.4.2.2 Permanent Indirect Impacts

Potential long-term or permanent indirect impacts to special-status wildlife species include generation of fugitive dust; off-road vehicle use; non-native, invasive plant and animal species; habitat fragmentation; increased human activity; creation of collision hazards; alteration of the natural fire regime; and altered hydrology.

Generation of Fugitive Dust. The effects of fugitive dust on special-status wildlife are the same as those described in Section 2.4.2.1.

Non-Native, Invasive Plant and Animal Species. Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including but not limited to the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for special-status wildlife species. In addition, trash can attract mesopredators such as ravens and raccoons or larger predators such as coyotes that could impact the wildlife species in the Project area.

Habitat Fragmentation. The Proposed Project would impact approximately 107.6 acres of vegetation communities and land covers within the Proposed Project site, resulting in potential habitat fragmentation. Habitat fragmentation can reduce diversity of species, spread invasive species, and reduce access to important habitats (Lovich and Ennen 2011). In addition, habitat fragmentation and isolation of wildlife populations may cause extinction of local populations as a result of two processes: reduction in total habitat area, which reduces effective population sizes; and insularization of local populations, which affects dispersal rates (Wilcox and Murphy 1985; Wilcove et al. 1986).

Increased Human Activity. Increased human activity could result in the potential for trampling of vegetation outside of the impacts footprint, as well as soil compaction, and could affect the viability and function of suitable habitat for wildlife species. Trampling can alter the ecosystem, creating gaps in native vegetation either leading to soil erosion or allowing exotic, non-native plant species to become established. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion. An increased human population increases the risk for damage to suitable habitat for wildlife species. In addition, increased human activity can deter wildlife from using habitat areas near the Proposed Project footprint.

Noise. Potential long-term noise impacts could occur as a result of Project-generated noise from the PV inverters, HVAC systems, and/or power inverters associated with the energy storage facilities. Noise impacts can have a variety of indirect impacts on wildlife species, as described in Section 2.4.2.1, above.

Alteration of the Natural Fire Regime. The Proposed Project could potentially increase the risk of fire, including but not limited to fire associated with electrical shorts or electrical equipment malfunction. Shorter-than-natural fire return intervals can preclude recovery of the native

vegetation between fires, weaken the ecological system, allow for invasion of exotic species, and result, in some cases, in permanent transition of the vegetation to non-native communities, such as annual grassland and weedy communities (Keeley 1987; Malanson and O'Leary 1982; O'Leary et al. 1992). If the natural fire regime is suppressed, longer-than-natural fire return intervals can result in excessive buildup of fuel loads so that when fires do occur, they are catastrophic. Unnaturally long fire intervals can also result in senescence of plant communities, such as chaparral, that rely on shorter intervals for rejuvenation. Alterations of plant communities could affect wildlife that relies on those habitat types.

Creation of Collision Hazards. The Proposed Project could potentially increase the risk of collisions due to sky reflection (or "pseudo-lake effect"). Although avian collisions with towers and structures have been well documented, there are few published papers that study the possibility that large areas of solar PV panels in the desert environment may mimic water bodies and inadvertently attract migrating or dispersing wetland bird species. Polarized reflections from solar PV arrays have been observed to attract insects (Horvath et al. 2010), which could in turn attract other sensitive wildlife, such as bats, but the magnitude of this effect is unknown, since no comprehensive scientific studies have been conducted for this potential phenomenon.

Anecdotal evidence suggests that wetland species, particularly those that require water to take flight (e.g., loons, grebes), may either collide with or become stranded in solar fields, resulting in fatalities. Two solar projects in the desert southwest had recent, publicized bird mortalities. One project is a different type of facility that does not rely on PV cells to generate electricity, instead using heat generated by mirrors reflecting and focusing sunlight on a central focal point to power a generator. Different types of effects might have killed the birds. Regardless, little is known about the actual percentage of species and individuals that are negatively affected by the hypothetical pseudo-lake effect of PV arrays. USFWS recognizes the lack of data on the effects of solar facilities on migratory bird mortality, and provides guidance on monitoring migratory bird mortalities at solar facilities (Nicolai et al. 2011). However, little scientific information is available to assess the magnitude or likely risk associated with such events, and a detailed discussion of the potential impacts would be speculative. Regardless, the following factors would minimize the risk of collision due to sky reflection: (1) the Project is not located near bodies of water that would attract wetland-associated birds; (2) the locale is not considered to be a major contributor to the Pacific Flyway; (3) the solar units would be spaced approximately 12.5 feet away from one another (note: final engineering design to be determined); and (4) the solar units would be uniformly dark in color, coated to be non-reflective, and designed to be highly absorptive of all light that strikes their glass surfaces, and may not appear like water from above, as water displays different properties by both reflecting and absorbing light waves.

The gen-tie line would include an approximately 1,500-foot overhead portion that would consist of a 138 kV overhead transmission line. The potential for avian collisions with the gen-tie cables is considered a minor risk compared to the higher voltage, long distance transmission lines in the region such as the Southwest Powerlink and Sunrise Power link. Furthermore the Project area is not an area where birds flock to wetlands or is part of migratory flyway or within a known eagle territory. However, the utility poles would provide perches from which avian species may forage, thereby increasing the potential risk of fatality associated with collisions and electrocutions.

Electromagnetic. It is known that migrating birds use electromagnetic directional senses and that artificial electromagnetic pulses can cause a response in some migration behaviors in some species (Holland and Helm 2013). However, there is very little scientific information available, and a discussion of the potential Project impacts would be speculative.

Altered Hydrology. Water would be used for operational purposes for cleaning the solar modules and for reapplication of the nontoxic permeable soils stabilizers that may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status wildlife species. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that are known to be seed dispersers and plant pollinators. Changes in plant composition could affect the native vegetation communities and wildlife habitat. Potential impacts would be reduced by design features that (i) contain the water and associated runoff used during operation and maintenance activities within the Proposed Project impact footprint, (ii) specify installation of drip-irrigated landscaping for the Proposed Project, and (iii) ensure that nursery stock has been fumigated against ant infestation prior to transport to the Project site. Water, and associated runoff, used during operation and maintenance activities will be contained within the Proposed Project impact footprint, thereby reducing those impacts. The potential introduction of non-native ants could cause long-term indirect impacts.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.

2.5 Wetlands/Jurisdictional Waters

2.5.1 Direct Impacts to Jurisdictional Wetlands/Jurisdictional Waters

2.5.1.1 Temporary Direct Impacts

The Proposed Project would not result in any direct temporary impacts to jurisdictional waters. All impacts to jurisdictional waters are considered permanent direct impacts and are further discussed below.

2.5.1.2 Permanent Direct Impacts

The Proposed Project would result in permanent direct impacts to non-wetland waters within the proposed solar site and gen-tie alignment. Construction of the proposed solar site would result in 0.2 acre, or 4,177 linear feet, of permanent direct impacts to non-wetland waters, and construction of the proposed gen-tie alignment would result in 0.01 acre, or 84 linear feet, of direct impacts to non-wetland waters. Both sites total 0.21 acre, or 4,261 linear feet, of permanent direct impacts to non-wetland waters. All delineated non-wetland waters are under the jurisdiction of ACOE, CDFW, and RWQCB (Figure 8). The significance of these potential impacts is determined through application of the County Significance Guidelines as described in Sections 4 and 5.

2.5.2 Indirect Impacts to Wetlands/Jurisdictional Waters

2.5.2.1 Temporary Indirect Impacts

Potential short-term or temporary indirect impacts to non-wetland waters in the Project area would primarily result from construction activities and include impacts related to or resulting from the changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants. Potential short-term indirect impacts that could affect all the non-wetland waters that occur on the Project site are described in detail in Section 2.2.2.

All non-wetland waters on site could be impacted by potential temporary indirect impacts such as those previously listed. The significance of these potential impacts is determined through application of the County Significance Guidelines described in Sections 4 and 5.

2.5.2.2 Permanent Indirect Impacts

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the Proposed Project to non-wetland waters after construction, including impacts related to operation and maintenance. Operation and maintenance activities will occur within the impact footprint. Permanent indirect impacts that could affect non-wetland waters include chemical pollutants, altered hydrology, non-native invasive species, increased human activity, alteration of the natural fire regime, and shading. These impacts are described in detail in Section 2.2.2.

All non-wetland waters in the Project area could be impacted by potential long-term or permanent indirect impacts such as those previously listed. The significance of these potential impacts is determined through application of the County Significance Guidelines described in Sections 4 and 5.

2.6 Habitat Connectivity and Wildlife Corridors

2.6.1 Direct Impacts to Habitat Connectivity and Wildlife Corridors

2.6.1.1 Temporary Direct Impacts

Short-term, construction-related, or temporary direct impacts to habitat connectivity and wildlife corridors would primarily result from construction activities and are the same as those described for vegetation communities/land covers in Section 2.2.1. These potential effects could impact wildlife movement through these areas by reducing cover and food sources. The significance of these potential impacts is determined through application of the County Significance Guidelines described in Section 6.

2.6.1.2 Permanent Direct Impacts

Implementation of the Proposed Project is not expected to result in long-term or permanent direct impacts to habitat connectivity and wildlife corridors for large mammals. See Section 1.4.8 for a detailed discussion regarding habitat connectivity and wildlife corridors. Although the Project area is included within a Core Wildlife Area defined by the County based on its size and the surrounding undeveloped land, the area does not serve as a defined wildlife corridor due to the lack of riparian corridors or other topographical features.[10] The Project site is currently undeveloped, but the International border fence limits the ability of the Project site to function as a linear north–south wildlife corridor for large mammals. Since openings in the fence are located off site, north–south wildlife movement is anticipated to be higher in these areas (see Figure 7). Although construction of the Proposed Project site would impact areas where wildlife may generally move through, it is not anticipated to hinder wildlife movement through the surrounding undeveloped landscapes, including the Open Space Preserve. Therefore, installation of the solar facility is not anticipated to constrain a wildlife movement corridor within the region.

The Project would require permanent fencing (9-foot-tall chain-link fencing with barbed-wire topping) around the entire Project area. Mule deer, coyotes, and mountain lions that may move through the site are not likely to jump over a 9-foot-tall fence. Therefore, installing barbed wire at the top of the fence will not affect wildlife in the area. However, larger wildlife cannot move south through the Project site due to the International border fence along the southern border of the Project area.

[10] As described in Section 1.4.8, wildlife corridors are defined as areas that connect suitable wildlife habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features, such as canyon drainages, ridgelines, or areas with vegetation cover, provide corridors for wildlife travel.

Small wildlife species (e.g., lizards and small mammals) will be able to access the site through openings in the fence, and even though vegetation within solar site may grow to 6 inches above ground, this may still cause a permanent significant wildlife movement impact due to loss of habitat for smaller wildlife that cannot easily move around or through the site to access habitat on the far side.

The gen-tie alignment, while crossing parts of a Core Wildlife Area(s) is not expected to result in impacts to wildlife movement because animals can cross over, under and through the alignment without confinement, blocking, harm or other impact.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 6.

2.6.2 Indirect Impacts to Habitat Connectivity and Wildlife Corridors

2.6.2.1 Temporary Indirect Impacts

Short-term indirect impacts to habitat connectivity and wildlife corridors could result from increased human activity, lighting, and noise, and during construction. Project construction would likely take place during the daytime and would not affect wildlife species such as mammals that are most active in the evening and at night. Noise pollution is not anticipated to interfere with the nesting or breeding of any special-status species. The descriptions for impacts associated with human activity and noise are described in Section 2.4.2.

Lighting. Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system may be required during construction. Remote-monitored cameras and alarm system(s), and perimeter and safety lighting that would be used only on an as-needed basis for emergencies, protection against security breach, or unscheduled maintenance and trouble-shooting (such as may occasionally be required) would be installed. Specifically, lighting would be provided at the entrance gates, and the Project substation. Lighting would use bulbs that do not exceed 100 watts and all lights will be shielded and directed downward to minimize any effects to the surrounding area, and would be used only on an as-needed basis.

2.6.2.2 Permanent Indirect Impacts

Long-term indirect impacts include fencing of the Project site and lighting.

Fencing. Nine-foot-tall perimeter fencing (including 1 foot of security barbed wire) would be constructed around the Project area, which could result in limited movement of certain species.

Lighting. Some localized security-related lighting, on-site security personnel, and/or remotely monitored alarm system may be required during operations. Remote-monitored cameras and alarm system(s), and perimeter and safety lighting that would be used only on an as-needed basis for emergencies, protection against security breach, or unscheduled maintenance and trouble-shooting (such as may occasionally be required) would be installed. Specifically, lighting would be provided at the entrance gates, and the Project substation. The on-site substation would include lighting inside the substation to allow for safety inspections or maintenance that may be required during the evening hours. Lighting would also be provided next to the entrance door to the control house and mounted at the entrance gates to allow for safe entry. Since maintenance activities are not anticipated to be completed during the evening hours, lights would only be turned on if needed. Lighting would use bulbs that do not exceed 100 watts and all lights will be shielded and directed downward to minimize any effects to the surrounding area, and would be used only on an as-needed basis.

The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 6.

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3 SPECIAL-STATUS SPECIES

3.1 Guidelines for the Determination of Significance

The County's Guidelines for Determining Significance (County of San Diego 2010b) that follow are based on the criteria in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and were used to analyze potential direct and indirect impacts to biological resources. The significance criteria include analysis of whether:

Guideline 4.1 The project would have a substantial adverse effect, either directly or through habitat modifications, on a candidate, sensitive, or special-status species listed in local or regional plans, policies, or regulations, or by CDFG or USFWS.

A. The project would impact one or more individuals of a species listed as federally or state endangered or threatened.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a state Species of Special Concern (SSC). Impacts to these species are considered significant; however, impacts of less than 5% of the individual plants or of the sensitive species' habitat on a project site may be considered less than significant if a biologically based determination can be made that the project would not have a substantial adverse effect on the local long-term survival of that plant or animal taxon.

C. The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.

D. The project may impact arroyo toad aestivation, foraging, or breeding habitat. Any alteration of suitable habitat within 1 kilometer (3,280 feet) in any direction of occupied breeding habitat or suitable stream segments (unless very steep slopes or other barriers constrain movement) could only be considered less than significant if a biologically based determination can be made that the project would not impact the aestivation or breeding behavior of arroyo toads.

E. The project would impact golden eagle habitat. Any alteration of habitat within 4,000 feet of an active golden eagle nest could only be considered less than significant if a biologically based determination can be made that the project would not have a substantially adverse effect on the long-term survival of the identified pair of golden eagles.

F. The project would result in the loss of functional foraging habitat for raptors. Impacts to raptor foraging habitat is considered significant; however, impacts of less than 5% of the raptor foraging habitat on a project site may be considered less than significant if a biologically based determination can be made that the project would not have a substantial adverse effect on the local long-term survival of any raptor species.

G. The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, although smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species. Alteration of any portion of a core habitat could only be considered less than significant if a biologically based determination can be made that the project would not have a substantially adverse effect on the core area and the species it supports.

H. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing undeveloped lands or other natural habitat areas, to levels that would likely harm sensitive species over the long term. The following issues should be addressed in determining the significance of indirect impacts: increasing human access; increasing predation or competition from domestic animals, pests, or exotic species; altering natural drainage; and increasing noise and/or nighttime lighting to a level above ambient that has been shown to adversely affect sensitive species.

I. The project would impact occupied burrowing owl habitat.

J. The project would impact occupied cactus wren habitat, or formerly occupied coastal cactus wren habitat that has been burned by wildfire.

K. The project would impact occupied Hermes copper habitat.

L. The project would impact nesting success of the following sensitive bird species through grading, clearing, fire-fuel modification, and/or other noise-generating activities such as construction.

Species	Breeding Season
Coastal cactus wren	February 15 to August 15
Least Bell's vireo	March 15 to September 15
Southwestern willow flycatcher	May 1 to September 1

Species	Breeding Season
Tree-nesting raptors	January 15 to July 15
Ground-nesting raptors	February 1 to July 15
Golden eagle	January 1 to July 31
Light-footed clapper rail	February 15 to September 30

3.2 Analysis of Project Effects

3.2.1 Project Effects Relevant to Guideline 4.1.A

There are no federally listed or state-listed endangered or threatened species in the Project area.

3.2.2 Project Effects Relevant to Guideline 4.1.B

3.2.2.1 Special-Status Plant Species (County List A and B Species)

No rare plant surveys were conducted for the Project site due to survey limitations, as described in Section 1.3.4.1; therefore, impacts to special-status plants are based on impacts to suitable habitat. In addition, due to the inability to conduct rare plant surveys in 2013 and 2014, the impact analysis for special-status plants includes those with a moderate or high potential to occur, whereas the County guidelines (County of San Diego 2010b, page 11) only require text description of species identified on site or having a high potential to be present.

Short-term, construction-related, or temporary direct impacts to suitable habitat for County List A and B plant species would primarily result from construction activities. Clearing, trampling, or grading of suitable habitat for special-status plants outside designated construction zones could occur in the absence of avoidance and mitigation measures. Potential temporary direct impacts to County List A and B plant species on site would be significant, absent mitigation (**Impact BI-SP-1**). However, these short-term direct impacts will be mitigated to a level below significant through implementation of mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which prohibits planting of invasive plants that can compete with native plants for resources and avoids indirect impacts to jurisdictional resources that may be potential habitat for special-status plants; and **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status plants.

Suitable habitat for six County List A plant species that have a high to moderate potential to occur on site—Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's

tetracoccus, southern jewelflower, and tecate tarplant—and five County List B plant species that have a high to moderate potential to occur on site—sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, and Parish's desert-thorn—would experience long-term direct impacts by the Proposed Project (**Impact BI-SP-2**). Figure 8 shows the potential Project impacts to suitable habitat for County List A and B plant species on site, including semi-desert chaparral, Peninsular juniper woodland and scrub, Sonoran mixed woody scrub, and disturbed lands (Appendix E). Table 5 summarizes the proposed direct impacts to suitable habitat for County List A and B plant species and the significance of the impacts prior to and after mitigation (Appendix E). The proposed impacts to suitable habitat for these special-status plants would be significant, absent mitigation. Long-term direct impacts to suitable habitat for special-status plants will be mitigated to a level below significant through implementation of mitigation measure **M-BI-4** (habitat preservation and management), which conserves 180.4 acres of vegetation communities and soil types to potentially support all of these species. The majority of the modeled habitat (58% to 95%) would be conserved in open space. Although some modeled habitat for special-status species is described as one impacted vegetation community (i.e., pink fairy duster and Parish's desert-thorn), there are suitable soils for these species throughout the open space areas, and the conserved vegetation communities have similar open and sparse characteristics and vegetation composition as the impacted Sonoran mixed woody shrub. For these two species, **M-BI-5** includes preconstruction surveys to be conducted in Sonoran mixed woody shrub. If found, then other surrounding similar vegetation communities would be surveyed to verify that, at a minimum, an equal amount of the species (either by area or number) will be preserved, or a similar number will be transplanted into apparently suitable surrounding vegetation communities. Therefore, considering the moderate potential to occur on site, and that neither of these species are federally or state listed, the conservation of 180.4 acres of other habitat types and the preconstruction survey stipulations are considered sufficient to mitigate potential impacts to less than significant.

Table 5
Summary of Direct Impacts to Suitable Habitat for County List A and B Plant Species and Significance Prior to and After Mitigation

County List	Species	CRPR	Acreage of Suitable Habitat	Acreage of Suitable Habitat within Impact Footprint[1]	Percentage of Suitable Habitat Impacted	Significance Prior to Mitigation	Significance After Mitigation
A	Jacumba milk-vetch	1B.2	217.7	30.3	14%	Significant	Less than significant
	Pygmy lotus	1B.3	90.6	4.1	5%	Significant	Less than significant
	Mountain Springs bush lupine	1B.3	120.1	25.5	21%	Significant	Less than significant
	Parry's tetracoccus	1B.2	186.9	74.9	40%	Significant	Less than significant
	Southern jewelflower	1B.3	217.7	30.3	14%	Significant	Less than significant
	Tecate tarplant	1B.2	186.9	74.9	40%	Significant	Less than significant
B	Sticky geraea	2.3	199.5	83.2	42%	Significant	Less than significant
	Slender-leaved ipomopsis	2.3	220.9	33.6	15%	Significant	Less than significant
	Desert beauty	2.3	186.9	74.9	40%	Significant	Less than significant
	Pink fairy-duster	2.3	3.2	3.2	100%	Significant	Less than significant
	Parish's desert-thorn	2.3	3.2	3.2	100%	Significant	Less than significant

[1] Includes direct impacts from access road, maintenance around gen-tie poles, solar site, and fuel modification zone (see Table 4).

3.2.2.2 Special-Status Wildlife Species (County Group 1 or State SSC)

Consistent with the County's guidelines, the impact analysis for special-status wildlife species focuses on those species identified on site or having a high potential to be present (see County of San Diego 2010b, page 11).

Five County Group 1 and/or state SSC animal species were detected within the Project area: Bell's sparrow, turkey vulture, loggerhead shrike, San Diego black-tailed jackrabbit, and potentially San Diego desert woodrat (see Section 1.4.6). Figure 8 shows the Proposed Project impacts in relation to the special-status wildlife observations mapped on site.

In addition, four County Group 1 and/or state SSC wildlife species have high potential to occur within the Project area: Blainville's horned lizard, Belding's orange-throated whiptail, northern red diamond rattlesnake, and northwestern San Diego pocket mouse.

The following County Group 1 and/or state SSC wildlife species have a high potential to forage in the Project area, but not nest or roost: Cooper's hawk, prairie falcon, and golden eagle. Impacts to wildlife species are discussed in more detail in Section 2.4.1.

Species that have not been observed on site, have limited suitable habitat on site based on focused (e.g., burrowing owl) or general habitat assessments (e.g., coast patch-nosed snake), and/or are not known to occupy the immediate vicinity but have some potential to occur based on movement and distribution, are described in Appendix F as having moderate potential to occur. Because of the reasons stated above, the Proposed Project is not considered to impact any on-site populations or have an adverse effect on the long-term survival of species with a moderate potential to occur, and therefore they are not addressed further.

Loss of special-status wildlife species (County Group 1 or state SSC animals), including individual reptiles and small mammals, from short-term, construction-related activities would be significant, absent mitigation (**Impact BI-W-1**). This impact will be mitigated through mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which requires a variety of BMPs to protect open space habitat and limits vehicle speeds to reduce potential collisions with wildlife species; **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status wildlife; **M-BI-6** (restrictions on construction and operation and maintenance personnel activity), which prevents harassment to wildlife, inadvertent impacts to habitat outside the disturbance areas, and attracting nuisance predators; **M-BI-7** (preconstruction surveys for nesting birds and setbacks), which prevents direct loss of active nests and indirect disturbance to active nests; and **M-BI-8** (cover trenches and holes; monitoring excavated areas and soil piles), which prevents wildlife from becoming trapped in trenches, holes, and excavations. As described under **M-BI-7**, it is recommended that Project construction occur outside the typical nesting period for most bird species (i.e., outside the period February 1–August 31) to limit impacts to nesting birds, or that a nesting bird survey is conducted within 72 hours of Project implementation. Based on the Migratory Bird Treaty Act (MBTA), if any active nests or the young of nesting special-status bird species (County Group 1 or state SSC animals) are impacted through direct grading, these impacts would be significant, absent mitigation (**Impact W-2**). This impact will be mitigated through mitigation measure **M-**

BI-7 (preconstruction surveys for nesting birds and setbacks), which prevents direct loss of active nests and indirect disturbance to active nests.

Potential long-term, permanent direct impacts from the Proposed Project to the wildlife species described in Section 2.4 include removal of suitable nesting and/or foraging habitat, summarized in Table 6. Loss of suitable nesting/foraging habitat would be significant, absent mitigation (**Impact W-BI-3**). These impacts will be mitigated through mitigation measure **M-BI-4** (habitat preservation and management), which includes preservation and management of more than a 1:1 mitigation ratio of suitable habitat for the wildlife species listed in Table 6.

Table 6
Impacts to Suitable Habitat for Group 1 and/or SSC Wildlife Species

Species Name	Acreage of Suitable Habitat	Acreage of Suitable Habitat within Impact Footprint[1]	Percentage of Suitable Habitat Impacted	Significance Prior to Mitigation	Significance After Mitigation
Amphibians and Reptiles					
Blainville's horned lizard	300.9	111.5	37%	Significant	Less than significant
Belding's orange-throated whiptail	297.4	108.6	37%	Significant	Less than significant
Northern red-diamond rattlesnake	300.9	111.5	37%	Significant	Less than significant
Birds					
Cooper's hawk – foraging	300.9	111.5	37%	Significant	Less than significant
Prairie falcon – foraging	300.9	111.5	37%	Significant	Less than significant
Golden eagle – foraging	300.9	111.5	37%	Significant	Less than significant
Bell's sparrow – foraging and nesting	179.5	74.9	42%	Significant	Less than significant
Turkey vulture – foraging	300.9	111.5	37%	Significant	Less than significant
Loggerhead shrike – foraging	300.9	111.5	37%	Significant	Less than significant
Loggerhead shrike – nesting	284.2	100.3	35%	Significant	Less than significant
Mammals					
Northwestern San Diego pocket mouse	300.9	111.5	37%	Significant	Less than significant
San Diego black-tailed jackrabbit	300.9	111.5	37%	Significant	Less than significant
San Diego desert woodrat	300.9	111.5	37%	Significant	Less than significant

1 Includes direct impacts from access road, maintenance around gen-tie poles, solar site, and fuel modification zone.

3.2.3 Project Effects Relevant to Guideline 4.1.C

3.2.3.1 Special-Status Plant Species (County List C and D Species)

Clearing, trampling, or grading of suitable habitat for one County List C plant species that has a moderate potential to occur on site—Fremont barberry—and six County List D plant species that

have a high to moderate potential to occur on site—Payson's jewel-flower, Colorado Desert larkspur, Wolf's cholla, Palmer's grappling hook, Pride-of-California, and low bush monkeyflower outside designated construction zones could occur in the absence of avoidance and mitigation measures. Of these species, Fremont barberry has a CRPR 2.3 which means the species is rare outside of California and fairly endangered in California; and within California less than 20% of occurrences are threatened or no current threats are known (CNPS 2014). Potential temporary direct impacts to Fremont barberry on site would be significant, absent mitigation (**Impact BI-SP-1**). However, these short-term direct impacts will be mitigated to a level below significant through implementation of mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which requires a variety of BMPs to protect open space habitat and limits vehicle speeds to reduce potential collisions with wildlife species; and **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status plants. Potential temporary direct impacts to County D plant species would not be significant because, based on the species' CRPR of 4.2 and 4.3, these species are of limited distribution but are not considered rare, and have a low "vulnerability or susceptibility to threat"; therefore, the impact will not substantially affect long-term survival of the species (CNPS 2014).

There are long-term direct impacts to suitable habitat for one County List C plant species that has a moderate potential to occur on site—Fremont barberry —and six County List D plant species that have a high to moderate potential to occur on site— Payson's jewel-flower, Colorado Desert larkspur, Wolf's cholla, Palmer's grappling hook, Pride-of-California, and low bush monkeyflower; however, only impacts to Fremont barberry would be significant, absent mitigation (**Impact BI-SP-2**). Figure 8 shows the Proposed Project impacts to suitable habitat for County List C and D plant species on site: semi-desert chaparral, Peninsular juniper woodland and scrub, Sonoran mixed woody scrub, and disturbed lands. Long-term impacts to potentially suitable habitat will be mitigated through mitigation measure **M-BI-4** (habitat preservation and management), which includes preservation and management of 86% of modeled suitable habitat through an on-site conservation easement.

Similar to the short-term direct impacts to County D plant species, long-term direct impacts to potentially suitable habitat would not be significant because the potential impacts would not substantially affect long-term survival of the species.

Table 7 summarizes the proposed direct impacts to suitable habitat for County List C and D plant species and the significance of the impacts prior to and after mitigation.

Table 7
Summary of Direct Impacts to Suitable Habitat for County List C and D Plant Species and Significance Prior to and After Mitigation

County List	Species	CRPR	Acreage of Suitable Habitat	Acreage of Suitable Habitat within Impact Footprint[1]	Percentage of Suitable Habitat Impacted	Significance Prior to Mitigation[2]	Significance After Mitigation
C	Fremont barberry	2.3	217.7	30.3	14%	Significant	Less than significant
D	Payson's jewel-flower	4.2	186.9	74.9	40%	Less than significant	Less than significant
	Colorado Desert larkspur	4.3	307.0	100.3	33%	Less than significant	Less than significant
	Wolf's cholla	4.3	3.2	3.2	100%	Less than significant	Less than significant
	Palmer's grappling hook	4.2	65.6	29.4	45%	Less than significant	Less than significant
	Pride-of-California	4.3	186.9	74.9	40%	Less than significant	Less than significant
	Low bush monkeyflower	4.3	186.9	74.9	40%	Less than significant	Less than significant

1 Includes direct impacts from access road, maintenance around gen-tie poles, solar site, and fuel modification zone (see Table 4).
2 Long-term direct impacts to County D plant species and long-term direct impacts to potentially suitable habitat would not be significant because the potential impacts would not substantially affect long-term survival of the species.

3.2.3.2 Special-Status Wildlife Species (County Group 2)

As summarized in Section 1.4.6, the following County Group 2 special-status wildlife species were incidentally observed either directly or indirectly (i.e., scat, tracks) within the Project area: California horned lark (*Eremophila alpestris actia*), western bluebird (*Sialia mexicana*), barn owl (*Tyto alba*), and monarch butterfly (*Danaus plexippus*). Figure 8 shows the Proposed Project impacts in relation to the special-status wildlife observations mapped on site.[11] Two additional Group 2 species were observed and are analyzed in Section 3.2.2.2 because they are state SSC animals: San Diego black-tailed jackrabbit and San Diego desert woodrat.

The following four County Group 2 wildlife species have high potential to occur within the Project area: coastal whiptail (*Aspidoscelis tigris stejnegeri*), rosy boa, mule deer (*Odocoileus hemionus*), and mountain lion (*Puma concolor*). Five additional Group 2 species have high potential to occur and are analyzed in Section 3.2.2.2 because they are state SSC animals:

11 Not all observations of these species were mapped.

Belding's orange-throated whiptail, Blainville's horned lizard, northwestern San Diego pocket mouse, and northern red-diamond rattlesnake.

Loss of individual County Group 2 special-status species from short-term, construction-related activities would be significant, absent mitigation **(Impact BI-W-4)**.[12] This impact will be mitigated through mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which requires a variety of BMPs to protect open space habitat and limits vehicle speeds to reduce potential collisions with wildlife species; **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status plants; and **M-BI-8** (cover trenches and holes; monitoring excavated areas and soil piles), which prevents wildlife from becoming trapped in trenches, holes, and excavations. Additionally, under the MBTA, if any active nests or young of nesting special-status bird species (County Group 2) are impacted through direct grading, these impacts would be significant, absent mitigation (**Impact BI-W-5**). This impact will be mitigated through mitigation measure **M-BI-7** (preconstruction surveys for nesting birds and setbacks), which prevents direct loss of active nests and indirect disturbance to active nests.

Long-term impacts from the potential loss of County Group 2 special-status wildlife species that are not state SSC animals would be less than significant due either to their regional widespread presence or the Project area's lack of relative importance to these species because they occur within a variety of habitats and through a wide geographic, topographic, and elevational range of which there is an abundance in the region; therefore, the Proposed Project would not impact the long-term survival of these species.

3.2.4 Project Effects Relevant to Guideline 4.1.D

No arroyo toads (*Anaxyrus californicus*) have been detected in the Project area nor are they expected to occur. Arroyo toads are not known from this area and have not been documented in the Jacumba quadrangle or surrounding six quadrangles (CDFW 2014a). The Project area lacks suitable habitat for this species, such as perennial or intermittent stream channels. The closest USFWS occurrence is approximately 21 miles northwest of the Project area (CDFW 2014a; USFWS 2014).

[12] County Group 2 special-status wildlife species that are state SSC are addressed in Section 3.2.2.2, Special-Status Wildlife (Group 1).

3.2.5 Project Effects Relevant to Guideline 4.1.E

Golden eagle was not observed during surveys and no active nests are known to occur within 4,000 feet of the Project area. The closest suitable nesting habitat is located approximately 1.3 miles north of the Project area in the Table Mountains where there may be rocky outcrops suitable for nesting, and where this species has been documented (CDFW 2014a). This species has potential to forage over the site, but there are no suitable nesting areas within 4,000 feet of the Project area.

3.2.6 Project Effects Relevant to Guideline 4.1.F

Foraging habitat for raptors, including golden eagle, is present throughout portions of the Project area. Approximately 111.5 acres of vegetation communities and land covers will be impacted. Many of these habitats would be considered suitable foraging habitat for raptors. Therefore, impacts to raptor foraging habitat would be significant, absent mitigation (**Impact BI-W-6**). Impacts to raptor foraging habitat will be mitigated through mitigation measure **M-BI-4** (habitat preservation and management), which conserves 180.4 acres (60%) of suitable raptor foraging habitat through an on-site open space conservation easement.

3.2.7 Project Effects Relevant to Guideline 4.1.G

The solar site is included within a Core Wildlife Area (a large block of habitat that supports multiple wildlife species), even though the 304-acre property is bordered by the U.S./Mexico International border fence, which may exclude some larger wildlife from moving directly through the Proposed Project area. The gen-tie alignment is also within a core area or areas, but due to its linear nature and its permeability, its core status is not an issue.

The Project would impact 111.5 acres of land. This impact to viable populations of multiple wildlife species would significant, absent mitigation (**Impact BI-W-7**) (see Appendix F for the special-status wildlife species that were observed or have potential to occur). Mitigation measure **M-BI-4** (habitat preservation and management) would conserve 180.4 acres (60%) of suitable habitat through an on-site open space conservation easement. Both the special-status wildlife species observed on site, as well as non-special-status wildlife species that occur, are relatively common in the area (e.g., San Diego jackrabbit and loggerhead shrike), and conservation of 180.4 acres of a large block of habitat would reduce potential adverse effects on a core area and the species it supports to less than significant.

3.2.8 Project Effects Relevant to Guideline 4.1.H

3.2.8.1 Special-Status Plant Species

Short-term indirect impacts to County List A and B plant species (and one County List C – Fremont barberry, CRPR 2.3) as a result of the Proposed Project are described in Section 2.3.2.1 and include construction-related or temporary indirect impacts resulting in generation of fugitive dust, altered natural drainage (i.e., changes in hydrology due to construction), and the introduction of chemical pollutants.

The potential short-term indirect impacts to County List A and B plant species (and Fremont barberry) would be significant, absent mitigation (**Impact BI-SP-3**). Potential short-term indirect impacts to County List A and B plant species will be mitigated to less than significant through implementation of mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which prohibits planting of invasive plants that can compete with native plants for resources and avoids indirect impacts to jurisdictional resources that may be potential habitat for special-status plants; **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status plants; and **M-BI-9** (implementation of a Fugitive Dust Control Plan), which prevents construction-related impacts to the viability of special-status plants by requiring soil stabilizers, watering, and other dust-control methods during construction activities.

Potential long-term or permanent indirect impacts to County List A and B plant species (and Fremont barberry) as result of the Proposed Project are described in Section 2.3.2.2 and include generation of fugitive dust, habitat fragmentation, chemical pollutants (herbicides), increased or introduction of non-native invasive or exotic species, increased human access/activity, and alteration of the natural fire regime. Shading and/or nighttime lighting are expected to be contained within the Proposed Project impact footprint, and long-term indirect impacts associated with shading and/or nighttime lighting are not expected. These potential long-term indirect impacts would be significant, absent mitigation (**Impact BI-SP-4**), and would be mitigated to less than significant through implementation of mitigation measures **M-BI-4** (habitat preservation and management), which helps prevent habitat fragmentation through the conservation of a block of habitat in an open space conservation easement; **M-BI-6** (restrictions on operation and maintenance personnel activity), which prohibits operation and maintenance personnel from collecting plants and traveling outside the Project footprint; **M-BI-9** (implementation of a Fugitive Dust Control Plan), which minimizes traffic speeds and requires

the road leading to the facility entrance be paved to reduce dust; **M-BI-10** (biological review of landscape plans), which prohibits planting of invasive plants that can compete with native plants for resources and subsequently alter the habitat; **M-BI-11** (implementation of a Fire Protection Plan), which reduces potential loss of suitable habitat from increased fire risk through managed fuel clearing and maintenance; and **M-BI-12** (regulated herbicide application), which minimizes potential herbicide effects to plants through compliance with federal, state, and local laws, as well as requires weed control to minimize the spread of non-native species that can compete with natives for resources and alter habitat.

3.2.8.2 Special-Status Wildlife Species

Short-term indirect impacts to special-status wildlife species as a result of the Proposed Project are described in Section 2.4 and include construction-related, or temporary indirect impacts that could result in generation of fugitive dust, noise, chemical pollutants, increased human access/activity, and increased predation and/or competition from non-native or domestic animal species. Short-term indirect impacts to special-status wildlife species would be significant, absent mitigation (**Impact BI-W-8**). Short-term indirect impacts to special-status wildlife species will be mitigated to less than significant through implementation of mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which requires a variety of BMPs to protect open space habitat and limits vehicle speeds to reduce potential collisions with wildlife species; **M-BI-3** (preparation of a biological monitoring report), which ensures the required biological monitoring has been conducted to prevent inadvertent impacts to special-status wildlife; **M-BI-7** (preconstruction surveys for nesting birds and setbacks), which prevents indirect disturbance to active nests through avoidance buffers; **M-BI-9** (implementation of a Fugitive Dust Control Plan), which prevents construction-related impacts to the viability of vegetation communities by requiring soil stabilizers, watering, and other dust-control methods during construction activities; and **M-BI-13** (minimize night lighting), which prevents disruption of wildlife species' nocturnal behavior and/or increased predation risk.

Potential long-term or permanent indirect impacts to special-status wildlife species include generation of fugitive dust; domestic or non-native, invasive plant and animal species; habitat fragmentation; increased human access/activity; noise; collision hazard; altered hydrology; and alteration of the natural fire regime. Potential long-term indirect impacts to special-status wildlife species would be significant, absent mitigation (**Impact BI-W-9**). Long-term indirect impacts to special-status wildlife species will be mitigated to less than significant through implementation of mitigation measures **M-BI-1** (biological monitoring), which prevents inadvertent disturbance

to areas outside of the limits of grading, including areas where special-status species may occur; **M-BI-2** (SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits), which requires a variety of BMPs to protect open space habitat, protect jurisdictional waters, and limit vehicle speeds to reduce potential collisions with wildlife species; **M-BI-3** (preparation of a biological monitoring report), which ensures required biological monitoring to prevent inadvertent impacts to special-status wildlife; **M-BI-4** (habitat preservation and management), which helps prevent habitat fragmentation through the conservation of a block of habitat in an open space conservation easement; **M-BI-6** (restrictions on operation and maintenance personnel activity), which prohibits operation and maintenance personnel from harassing or collecting wildlife species, bringing pets on site, littering, and traveling outside the Project footprint; **M-BI-9** (implementation of a Fugitive Dust Control Plan), which minimizes traffic speeds and requires the road leading to the facility entrance be paved to reduce dust; **M-BI-10** (biological review of landscape plans), which prohibits planting of invasive plants that can compete with native plants for resources and subsequently alter habitat; **M-BI-11** (implementation of a Fire Protection Plan), which reduces potential loss of suitable habitat from increased fire risk through managed fuel clearing and maintenance; and **M-BI-14** (implement recommendations by the Avian Power Line Interaction Committee), which requires all transmission towers and lines to implement measures that protect raptors and other birds from electrocution. Additionally, mitigation measure **M-N-1** (see Section 2.5.5) requires that Proposed Project-generated noise from the PV inverters, HVAC systems, and power inverters associated with the energy storage facilities comply with the County's Noise Ordinance.

Regarding collisions with the solar panels as a result of a "pseudo-lake effect," as described in Section 2.4.2, there is currently insufficient research to assess the magnitude or likely risk associated with collisions with solar fields. The solar PV modules would be coated to be non-reflective and are designed to be highly absorptive of all light that strikes their glass surfaces. Based on the evidence available—non-reflective design of the solar panels, distance from large water bodies, distance from agricultural areas, typical migration patterns, comparatively few documented deaths—glare and pseudo-lake effect are not expected to result in significant impacts to migrating or local avian species.

3.2.9 Project Effects Relevant to Guideline 4.1.I

No burrowing owls have been detected in the Project area or are expected to regularly use the site, if at all. Based on focused habitat assessment and surveys conducted in the Project area (see Section 1.3.4.5), although three suitably sized burrows were detected, no burrowing owl sign or individuals were observed. In addition, all three potential burrows are located outside of proposed impact zones. Since some suitable habitat is present, and since this species was detected approximately 3.5 miles west of the Project site and they are potentially migratory,

this species is considered to have a moderate to low potential to occur. No impacts to occupied burrowing owl habitat would occur. Preconstruction surveys for nesting birds (see **M-BI-7** in Section 3.4) will further ensure no impacts to individuals and/or additional suitable burrows that may have developed since focused surveys were conducted. If owls were to be discovered during the preconstruction surveys, and they are within the CDFG 2012 guideline buffer limits, then a burrowing owl management plan would need to be written and approved by the County and CDFW. Table 8, Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls, provides the CDFG-recommended restricted activity dates and setback distances around occupied burrowing owl nests for varying levels of disturbance (CDFG 2012a).

Table 8
Recommended Restricted Activity Dates and Setback Distances
by Level of Disturbance for Burrowing Owls

Location	Time of Year	Level of Disturbance (meters)		
		Low	*Medium*	*High*
Nesting Sites	April 1–August 15	200	500	500
Nesting sites	August 16–October 15	200	200	500
Nesting Sites	October 16–March 31	50	100	500

Source: CDFG 2012a

3.2.10 Project Effects Relevant to Guideline 4.1.J

Although cactus wren (*Campylorhynchus brunneicapillus*) was observed in the Project area, the Project location is not within range of the special-status subspecies (*Campylorhynchus brunneicapillus sandiegensis*) (Shuford and Gardali 2008). Therefore, there are no impacts to occupied coastal cactus wren habitat.

3.2.11 Project Effects Relevant to Guideline 4.1.K

No Hermes copper butterflies (*Lycaena hermes*) have been detected in the Project area. The ~~butterflies~~ preferred ~~the adult~~ nectaring plant of the adult butterfly, California buckwheat (*Eriogonum fasciculatum foliolosum*), was not observed on site. Similarly, the larval host plant (i.e., true limiting factor), spiny redberry (*Rhamnus crocea*), has not been detected during biological surveys. Based on the lack of suitable habitat for this species, the Project area is not considered occupied Hermes copper butterfly habitat. Therefore, there are no impacts related to this guideline.

3.2.12 Project Effects Relevant to Guideline 4.1.L

Coastal cactus wren, coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), tree-nesting raptors, golden eagle, and light-footed clapper rail (*Rallus longirostris levipes*) are not expected to nest in the Project area due to lack of suitable habitat and tree (or similar) structures to support nesting; therefore, there would be no impacts to the nesting success of those species as a result of the Proposed Project. No ground-nesting raptors (e.g., northern harrier (*Circus cyaneus*) and short-eared owl (*Asio flammeus*)) are expected to nest in the Project area. Therefore, there would be no impacts to the nesting success of those species as a result of the Proposed Project.

3.3 Cumulative Impact Analysis

Cumulative impacts are not assessed in this document; they are discussed thoroughly in Section 2.2.4 of the Proposed Project's EIR.

3.4 Mitigation Measures

The Applicant is proposing mitigation on site that includes 180.4[13] acres located west and north of the solar Project area to mitigate for the loss of sensitive vegetation communities and habitat (and protect cultural resources also) that will be impacted as a result of the Proposed Project. A description of the mitigation site, including a list of vegetation communities and the potential for special-status plant and wildlife species to occur, is provided in the Jacumba Solar Biological Open Space Memorandum (Appendix I). A County Approved or Qualified Biologist is a professional biologist with a minimum of 2 years of experience, unless otherwise stated.

Mitigation measures for special-status plant species will be determined following the impacts analysis.

M-BI-1 To prevent inadvertent disturbance to areas outside the limits of grading, ~~temporary~~ fencing shall be installed and all grading shall be monitored by a biologist.

~~Temporary~~ Fencing. To prevent inadvertent disturbance to sensitive biological resources, ~~temporary construction~~ fencing shall be installed prior to grading the solar site and removed upon completion of decommissioning.. ~~Temporary f~~Fencing is required around the entire perimeter of the proposed solar facility.

[13] Only considers habitat with equivalent function or value. An additional 3.1 acres are disturbed land (not included in open space acreage).

Activities associated with the driveway and gen-tie line, which would occur outside the fence, will be restricted to demarked areas, flagging and/or staking would be used to delineate work limits~~in all locations of the Project where proposed grading or clearing is within 300 feet of an open space easement boundary~~. The placement of such fencing shall be approved by the County of San Diego (County) Department of Planning and Development Services (PDS). Upon approval, the fencing shall remain in place until the conclusion of grading activities, after which the fencing shall be removed if timing allows.

Monitoring. A County-approved biologist (Project Biologist) shall be contracted to perform biological monitoring during all grading, clearing, grubbing, trenching, ~~and~~ construction, and decommissioning activities.

The following shall be completed:

1. The Project Biologist shall perform the monitoring duties before, during, and after construction pursuant to the most current version of the County *Biological Report Format and Requirement Guidelines* and this permit. The contract provided to the County shall include an agreement that this will be completed, and a Memorandum of Understanding (MOU) between the biological consulting company and the County shall be executed. The contract shall include a cost estimate for the monitoring work and reporting. In addition to performing monitoring duties pursuant to the most current version of the County *Biological Report Format and Requirement Guidelines*, the Project Biologist also will perform the following duties:
    a. Attend the preconstruction meeting with the contractor and other key construction personnel prior to clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds).
    b. Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, or grading and clarifying that the Project Biologist has the authority to halt work that could harm or harass a protected species.
    c. Discuss procedures, such as prohibiting feeding wildlife, collecting special-status plant or wildlife species, traveling (either on foot or in a vehicle) outside of the Project footprint in undisturbed portions of the

Project area, bringing pets to the Project area, and littering on the Project area, for minimizing harm to or harassment of wildlife encountered during construction with the contractor and other key construction personnel prior to clearing, grubbing, or grading.

d. Review and/or designate the construction area in the field with the contractor in accordance with the final grading plan prior to clearing, grubbing, or grading.

e. Conduct a field review of the staking to be set by the surveyor, designating the limits of all construction activity prior to clearing, grubbing, or grading.

f. Be present during initial vegetation clearing, grubbing, and grading.

g. Flush special-status species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities.

h. To address hydrology impacts, the Project Biologist shall verify that grading plans include a Stormwater Pollution Prevention Plan (SWPPP) (if required pursuant to provisions of the State Water Resources Control Board 2009-0009-DWQ Construction General Permit, or equivalent applying the standards set forth in the County of San Diego Stormwater Standards Manual); see **M-BI-~~8~~ 2** for required best management practices (BMPs).

2. The cost of the monitoring shall be added to the grading bonds that will be posted with the Department of Public Works (DPW), or bond separately with the County Planning and Development Service (PDS).

   Documentation: The Applicant shall provide a copy of the biological monitoring contract, cost estimate, and MOU to the PDS. Additionally, the cost amount of the monitoring work shall be added to the grading bond cost estimate.

   Timing: Prior to approval of any grading and or improvement plans and issuance of any grading or construction permits.

   Monitoring: The PDS shall review the contract, MOU, and cost estimate or separate bonds for compliance with this condition. The cost estimate should be forwarded to the Project manager, for inclusion in the grading bond cost estimate, and grading bonds. The DPW shall add the cost of the monitoring to the grading bond costs.

The Project Biologist shall have the following minimum qualifications:

a. Have a bachelor's degree in biological sciences, zoology, botany, ecology or a closely related field and at least 2 years of experience in biological compliance for construction projects; and

b. Have at least 1 year of field experience with biological resources found in the geographic region of the Project.

M-BI-2 If required, the SWPPP or equivalent shall include, at a minimum, the BMPs listed below. The combined implementation of these requirements shall protect adjacent habitats and special-status species during construction to the maximum extent practicable. At a minimum, the following measures and/or restrictions shall be incorporated into the SWPPP and noted on construction and decommissioning plans, where appropriate, to avoid impacts on special-status species, special-status vegetation communities, and/or jurisdictional waters during construction. The Project Biologist shall verify the implementation of the following design requirements:

1. No planting or seeding of invasive plant species on the most recent version of the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory for the Project region will be permitted.
2. Location and details will be provided for dust-control fencing, if any.
3. Construction activity will not be permitted in jurisdictional waters of the United States/state except as authorized by applicable law and permit(s), including permits and authorizations approved by the U.S. Army Corps of Engineers (ACOE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB).
4. Silt settling basins installed during the construction process will be located away from areas of ponded or flowing water to prevent discolored, silt-bearing water from reaching areas of ponded or flowing water during normal flow regimes.
5. Temporary structures, staging, and storage areas for construction equipment and/or materials will not be located in jurisdictional waters, including wetlands and riparian areas.

6. Any equipment or vehicles driven and/or operated within a jurisdictional waters of the United States/state will be checked and maintained by the operator daily to prevent leaks of oil or other petroleum products that could be deleterious to aquatic life if introduced to the watercourse.
7. No stationary equipment, such as motors, pumps, generators, and welders, or fuel storage tanks will be located within jurisdictional waters of the United States/state.
8. No debris, bark, slash sawdust, rubbish, cement, or concrete, or washing thereof, oil, or petroleum products will be stored where it may be washed by rainfall or runoff into jurisdictional waters of the United States/state.
9. When construction operations are completed, any excess materials or debris will be removed from the work area.
10. No equipment maintenance will be performed within or near jurisdictional waters of the United States/state where petroleum products or other pollutants from the equipment may enter these areas.
11. Fully covered trash receptacles that are animal-proof and weather-proof will be installed and used by the operator to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Prohibit littering and ~~remove~~ require removal of trash from construction areas daily. All food-related trash and garbage shall be removed from the construction sites on a daily basis.
12. Pets on or adjacent to construction sites will not be permitted by the operator.
13. Enforce speed limits in and around all construction areas. Vehicles shall not exceed 15 miles per hour on unpaved roads and the right-of-way accessing the construction site or 10 miles per hour during the night.

M-BI-3 To ensure that the biological monitoring occurred during the grading phase of the Project, a final biological monitoring report shall be prepared. The Project Biologist shall prepare a final biological monitoring report. The report shall substantiate the supervision of the grading activities, and state that grading or construction activities did not impact any additional areas or any other special-status biological resources. The report shall conform to the County *Report Format Guidelines for Biological Resources*, and include the following items:

1. Photos of the ~~temporary~~ fencing or temporary flagging that was installed during the trenching, grading, or clearing activities

2. Monitoring logs showing the date and time that the monitor was on site
3. Photos of the site after the grading and clearing activities.

Documentation: The Project Biologist shall prepare the final report and submit it to the PDS for review and approval.

Timing: Prior to any occupancy, final grading release, or use of the premises in reliance of this permit, the final report shall be approved.

Monitoring: The PDS shall review the final report for compliance with this condition and the report format guidelines. Upon approval of the report, PDS shall inform DPW that the requirement is complete and the bond amount can be relinquished. If the monitoring was bonded separately, then PDS shall inform DPW to release the bond back to the Applicant.

M-BI-4 The Applicant will preserve in permanent open space ~~181~~ 180.4 acres of native habitats[14] generally consistent with the assemblage of vegetation communities impacted by the Project in an on-site Open Space Preserve area. This will include preservation of 183.5 acres (including 180.4 acres of native habitats) to mitigate for Project impacts to 99.9 acres of special-status upland vegetation communities, thereby preserving compensatory habitat that provides equal or greater benefit to plant and wildlife species. Proposed on-site Open Space Preserve has already been evaluated (see Appendix I) and may be used to satisfy this requirement.

To provide for the long-term management of the proposed Open Space Preserve, a Resource Management Plan (RMP) has been prepared (Appendix J) and will be implemented. The final RMP will be completed to the satisfaction of the Director of PDS or Department of Parks and Recreation (DPR), as follows: (1) the plan will be prepared and approved pursuant to the most current version of the County of San Diego Biological Report Format and Content Requirements; (2) the habitat land to be managed will be owned by a land conservancy or equivalent; (3) open space easements will be dedicated in perpetuity; (4) a resource manager will be selected and approved, with evidence provided demonstrating acceptance of this responsibility; (5) the RMP funding mechanism will be identified and adequate to fund annual costs for implementation; and (6) a contract between the Applicant

[14] Only considers habitat with equivalent function or value. An additional 3.1 acres are disturbed land (not included in the habitat with equivalent function or value acreage).

and County will be executed for the implementation of the RMP, and funding will be established with the County as the third-party beneficiary.

Open Space Signage and Barriers. To protect the proposed open space easement from entry, informational signs shall be installed, where appropriate, along all open space edges where open space is adjacent to Old Highway 80 and on-site dirt roads, and as indicated in the final RMP. The signs must be corrosion resistant, a minimum of 6 inches by 9 inches, on posts not less than 3 feet in height from the ground surface, and state "Sensitive Environmental Resources Protected by Easement. Entry without express written permission from the County of San Diego is prohibited."

Additionally, some barriers shall be constructed at select areas along the preserve boundary and within the Open Space Preserve to prevent access to the wider wash located in the western portion of the Open Space Preserve. These barriers may consist of large boulders, K-Rail barriers, fencing, or similar material that will prevent off-highway vehicle use but allow natural water flow to occur. Where barriers occur at drainages, ACOE and CDFW shall be consulted regarding their placement such that no additional permitting shall be required.

M-BI-5 Prior to construction, rare plant surveys for the six County List A plant species that have a high to moderate potential to occur on site, specifically Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's tetracoccus, southern jewel-flower, and Tecate tarplant, and the five County List B plant species that have a high to moderate potential to occur on site, specifically sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, and Parish's desert-thorn will ~~Parry's tetracoccus, Tecate tarplant, pink fairy-duster, and Parish's desert-thorn shall~~ be conducted to determine presence/absence. If these species are found, the Applicant shall develop a rare plant relocation plan for the on-site Open Space Preserve (prepared by a biologist with at least 5 years of experience in rare plant relocation), with plant specimens grown on site or from local seed or cutting sources. The individuals shall be planted within the open space to secure a 2:1 mitigation ratio for ~~Parry's tetracoccus and Tecate tarplant~~any County List A species, and a 1:1 mitigation ratio for ~~pink fairy-duster and Parish's desert-thorn~~County list B species identified. The rare plant relocation plan shall require the Applicant to submit a revegetation plan, including annual monitoring reports for at least 5 years after the replanting to demonstrate that the plants have been successfully established at the required mitigation ratio.

M-BI-6 Operation and maintenance personnel shall be prohibited from the following:

1. Harming, harassing, or feeding wildlife and/or collecting special-status plant or wildlife species
2. Traveling (either on foot or in a vehicle) outside of the Project footprint in undisturbed portions of the Project area
3. Bringing pets into the Project area
4. Littering on the Project area
5. Allowing persons not employed at the facility to remain on site after daylight hours or exceeding normal nighttime operational noise or lighting

M-BI-7 If construction or decommissioning work must occur during the avian nesting season (February 1 to August 31, and as early as January 1 for some raptors), the Applicant shall have surveys conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act and/or the California Fish and Game Code are present in the impact area or within 300 feet (500 feet for raptors) of the impact area.

If active nests are found, clearing and construction within 300 feet of the nest (500 feet for raptors) shall be postponed or halted, at the discretion of the biologist ~~in consultation with CDFW~~, until the nest is vacated and juveniles have fledged, as determined by the biologist, and there is no evidence of a second attempt at nesting. Limits of construction to avoid an active nest shall be established in the field with flagging, fencing, or other appropriate barriers in consultation with CDFW, and construction personnel shall be instructed on the sensitivity of nest areas.

If burrowing owls are discovered during the preconstruction surveys, and they are within the CDFG 2012 guideline buffer limits, then a burrowing owl management plan shall be written and approved by the County and CDFW. Table 9, Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls, provides the CDFG-recommended restricted activity dates and setback distances around occupied burrowing owl nests for varying levels of disturbance (CDFG 2012a).

Table 9
Recommended Restricted Activity Dates and Setback Distances by Level of Disturbance for Burrowing Owls

Location	Time of Year	Setback Distance (meters) by Level of Disturbance		
		Low	*Medium*	*High*
Nesting Sites	April 1–August 15	200	500	500
Nesting Sites	August 16–October 15	200	200	500
Nesting Sites	October 16–March 31	50	100	500

Source: CDFG 2012a

A biological monitor shall serve as construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to these nests occur. Results of the surveys shall be provided to CDFW in the annual mitigation status report.

This measure does not apply to nests that are started on construction equipment or panels or supporting structures.

M-BI-8 As a condition on the grading plans, the Project Biologist shall cover and/or provide escape routes for wildlife from excavated areas and monitor these areas daily. All steep[15] trenches, holes, and excavations during construction and decommissioning shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them. Soil piles will be covered at night to prevent wildlife from burrowing in. The edges of the sheeting will be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and prior to sealing the exposed area) by a qualified biologist to monitor for, and release wildlife, if they become entrapped. All excavations shall provide an earthen ramp to allow for a wildlife escape route.

M-BI-9 The Applicant shall develop a fugitive dust control plan in compliance with San Diego County Air Pollution Control Regulations to reduce particulate matter less than 10 microns (PM_{10}) and fine particulate matter less than 2.5 microns ($PM_{2.5}$) emissions during construction and decommissioning. The Fugitive Dust Control Plan shall include:

1. Name(s), address(es), and phone number(s) of person(s) responsible for the preparation, submission, and implementation of the plan.
2. Description and location of operation(s).

[15] Since steepness may vary depending on construction activities, steepness is based on the professional judgment of the monitoring biologist, but typically is considered more than a 30% slope.

3. Listing of all fugitive dust emissions sources included in the operation.
4. The following dust control measures shall be implemented:
    a. The road leading to the facility entrance shall be paved as early as practical during construction.
    b. All other on-site unpaved roads shall be effectively stabilized using soil stabilizers that can be determined to be as efficient, or more efficient for fugitive dust control than California Air Resources Board–approved soil stabilizers, and that it shall not increase any other environmental impacts including loss of vegetation. Application of the soil stabilizer shall be undertaken strictly to the manufacturer's directions for application and cognizant of the weather forecast to avoid application immediately before a rain event.
    c. All material excavated or graded will be sufficiently watered to prevent excessive dust. Watering will occur as needed with complete coverage of disturbed areas. The excavated soil piles are watered hourly for the duration of construction or covered with temporary coverings.
    d. Construction activities that occur on unpaved surfaces will be discontinued during windy conditions when winds exceed 25 miles per hour and when those activities cause visible dust plumes. All grading activities shall be suspended when wind speeds are greater than 30 miles per hour.
    e. Track-out shall not extend 25 feet or more from an active operation, and track-out shall be removed at the conclusion of each workday.
    f. All haul trucks hauling soil, sand, and other loose materials shall be covered (e.g., with tarps or other enclosures that would reduce fugitive dust emissions).
    g. Soil loads should be kept below 18 inches of the freeboard of the truck.
    h. Drop heights should be minimized when loaders dump soil into trucks.
    i. Traffic speeds on unpaved roads shall be limited to 25 miles per hour.
    j. Disturbed areas should be minimized.
    k. Disturbed areas should be revegetated or stabilized using soil binders that can be determined to be as efficient, or more efficient, for fugitive dust control than California Air Resources Board-approved soil stabilizers, as soon as possible after disturbance and shall not increase any other

environmental impacts including loss of vegetationas soon as possible after disturbance.

M-BI-10 Prior to installation of any landscaping and prior to decommissioning, plant palettes shall be reviewed by the Project Biologist to minimize the effects that proposed landscape plants could have on biological resources outside of the Project footprint due to potential naturalization of landscape plants in the undeveloped lands. Landscape plants shall not include invasive plant species on the most recent version of the Cal-IPC California Invasive Plant Inventory for the Project region. Landscape plans will include a plant palette composed of native species that do not require high irrigation rates.

M-BI-11 To minimize the potential exposure of the Project area to fire hazards, all features of the Jacumba Solar Energy Project Fire Protection Plan (Dudek 2014a) shall be implemented in conjunction with development of the Jacumba Solar Energy Project.

M-BI-12 Weed control treatments shall include all legally permitted chemical, manual, and mechanical methods applied with the authorization of the San Diego County agriculture commissioner. The application of herbicides shall be in compliance with all state and federal laws and regulations under the prescription of a pest control adviser (PCA) with at least 2-years' experience and implemented by a licensed applicator working for the Project owner. Where manual and/or mechanical methods are used, disposal of the plant debris will follow the regulations set by the San Diego County agriculture commissioner. The timing of the weed control treatment shall be determined for each plant species in consultation with the PCA, the San Diego County agriculture commissioner, and Cal-IPC with the goal of controllingin order to control populations before they start producing seeds and to prevent a public or private nuisance. Weed treatment shall occur at least once per year throughout the life of the Project.

M-BI-13 As a condition on the grading plans, minimize night construction lighting adjacent to native habitats. Lighting of construction and decommissioning areas at night shall be the minimum necessary for personnel safety and shall be low illumination, selectively placed, and directed/shielded appropriately, consistent with Class II lighting types in Zone A established by the County's light pollution code SEC. 51.204, to minimize lighting in adjacent native habitats.

M-BI-14 Provide evidence to the Director of PDS that all transmission towers and lines are designed to conform to Avian Power Line Interaction Committee (APLIC) standards. APLIC standards identify the necessary physical separation between energized and/or grounded structures, conductors, hardware, or equipment to avoid the potential for that to be bridged by birds, thus avoiding the potential for electrocution. The Proposed Project shall implement recommendations by the APLIC (2006, 2012) to protect raptors and other birds. Evidence shall be provided to PDS prior to approval of the building permit.

3.5 Conclusions

3.5.1 Special-Status Plant Species

Impact BI-SP-1 The significant short-term direct impacts to suitable habitat for Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's tetracoccus, southern jewelflower, and tecate tarplant, sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, Parish's desert-thorn, and Fremont barberry will be reduced to a level that is less than significant through implementation of mitigation measures **M-BI-1**, **M-BI-2**, and **M-BI-3**, which require biological monitoring, SWPPP BMPs, including restrictions on plantings, equipment staging and storage, and construction vehicle speed limits, and preparation of a biological monitoring report.

Impact BI-SP-2 The significant long-term direct impacts to Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's tetracoccus, southern jewelflower, and tecate tarplant, sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, Parish's desert-thorn, and Fremont barberry shall be reduced to a level that is less than significant through implementation of mitigation measure **M-BI-4**, which provides for 180.4 acres of on-site habitat conservation of equivalent function and value, and **M-BI-5**, which includes rare plant surveys prior to construction, and relocation of rare plants to the on-site Open Space Preserve at a 2:1 mitigation ratio for List A plants and 1:1 mitigation ratio for List B plants.

Impact BI-SP-3 The significant short-term indirect impacts to Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's tetracoccus, southern jewelflower, and tecate tarplant, sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, Parish's desert-thorn, and Fremont barberry will be reduced to a level that is less than significant through implementation

of mitigation measures **M-BI-1**, **M-BI-2**, **M-BI-3**, and **M-BI-9**, which require biological monitoring, SWPPP BMPs, including restrictions on plantings, equipment staging and storage, preparation of a biological monitoring report, and implementation of a Fugitive Dust Control Plan.

Impact BI-SP-4 The significant long-term indirect impacts to Jacumba milk-vetch, pygmy lotus, Mountain Springs bush lupine, Parry's tetracoccus, southern jewelflower, and tecate tarplant, sticky geraea, slender-leaved ipomopsis, desert beauty, pink fairy-duster, Parish's desert-thorn, and Fremont barberry will be reduced to a level that is less than significant through implementation of mitigation measures **M-BI-4**, **M-BI-6**, **M-BI-7**, **M-BI-10**, and **M-BI-11**, and **M-BI-12** provide for 180.4 acres of on-site habitat conservation of equivalent function and value, require restrictions on operation and maintenance personnel activity, implement of a Fugitive Dust Control Plan, implement a Fire Protection Plan, and regulate herbicide application.

3.5.2 Special-Status Wildlife Species

Impact BI-W-1 Potential significant short-term direct impacts from loss of County Group 1 Species will be reduced to less than significant through implementation of mitigation measures **M-BI-1**, **M-BI-2**, **M-BI-3**, **M-BI-6**, **M-BI-7**, and **M-BI-8**, which require biological monitoring during construction, restrictions on plantings, equipment staging and storage, and construction vehicle speed limits, preparation of a biological monitoring report, restrictions on operation and maintenance personnel activity, breeding season avoidance, and cover trenches and holes and monitoring excavated areas and soil piles. Additional design features that will also help reduce impacts include landscape monitoring and maintenance. These impacts have been reduced to less than significant because the measures will minimize the potential for loss of individuals.

Impact BI-W-2 The significant short-term direct impacts to active nests or the young of nesting County Group 1 or Group 2 or SSC species will be reduced to less than significant through implementation of mitigation measure **M-BI-7**, which requires preconstruction surveys for nesting birds and setbacks for active nests. These impacts have been reduced to less than significant by ensuring that nests and fledglings are not directly impacted by construction activities. Active nests will be flagged during the nesting bird surveys and buffers, which eliminate construction activities near nests, will be applied.

Impact BI-W-3 The significant long-term direct impacts to County Group 1 and Group 2 species (described in Table 6), as a result of removal of suitable habitat, will be reduced to less than significant through implementation of mitigation measure **M-BI-4**, which provides commensurate for on-site and off-site habitat management and conservation that has been demonstrated to contain habitat for these species. Avoidance of direct impacts on site for the individuals would be done during construction. These impacts have been reduced to less than significant because the on-site and off-site habitat and its management will provide and management equivalent or better function and value for these species and be managed and monitored in perpetuity.

Impact BI-W-4 The significant short-term direct impacts to County Group 2 species (described in Table 6), as a result of removal of suitable habitat, will be reduced to less than significant through implementation of mitigation measures **M-BI-1**, **M-BI-3**, and **M-BI-8**, which require biological monitoring, preparation of a biological monitoring report, monitoring excavated areas and soil piles, and preparation and implementation of a SWPPP. The SWPPP includes BMPs such as: fumigating plant stock for pests, including Argentine ants; dust control; covering trash receptacles; and reduced speed limits.

Impact BI-W-5 The significant short-term direct impacts to active nests or the young of nesting County Group 1 or Group 2 or SSC species will be reduced to less than significant through implementation of mitigation measure **M-BI-7**, which requires preconstruction surveys for nesting birds and setbacks for active nests. These impacts have been reduced to less than significant by ensuring that nests and fledglings are not directly impacted by construction activities. Active nests will be flagged during the nesting bird surveys and buffers, which eliminate construction activities near nests, will be applied.

Impact BI-W-6 The significant long-term direct impacts to foraging raptors, as a result of removal of suitable habitat, will be reduced to less than significant through implementation of mitigation measure **M-BI-4**, which provides for on-site preservation and management of 60% of suitable habitat that has demonstrated to contain foraging habitat for raptors. Avoidance of direct impacts on site for the individuals would be done during construction and operation of the Project by a monitoring biologist.

Impact BI-W-7 The significant impact to a core wildlife area will be reduced to less than significant through implementation of mitigation measure **M-BI-4**, because

the mitigation requires habitat conservation and management of equivalent or better function and value. An equal or greater amount of on-site or off-site habitat will be preserved as is impacted on site, thereby providing compensatory habitat to serve as a core wildlife area.

Impact BI-W-8 The significant short-term indirect impacts to special-status wildlife species will be reduced to less than significant through implementation of mitigation measures **M-BI-1**, **M-BI-2**, **M-BI-3**, **M-BI-7**, **M-BI-9**, and **M-BI-13**, which require biological monitoring; restrictions on construction vehicle speeds; restrictions on plantings, equipment staging and storage, and construction vehicle speed limits; preparation of a biological monitoring report; preconstruction surveys for nesting birds and setbacks; implementation of a Fugitive Dust Control Plan; and minimizing night lighting review of areas designated for clearing, grubbing, or grading.

Impact BI-W-9 The significant long-term indirect impacts to special-status wildlife species shall be reduced to less than significant through implementation of mitigation measures **M-BI-1 through M-BI-4, M-BI-6**, **M-BI-9**, **M-BI-10**, **M-BI-11**, **M-BI-14, and M-N-1** (see Noise, Section 2.5.5, of the EIR). Long-term indirect impacts to special-status wildlife species shall be minimized through biological monitoring; SWPPP and BMPs; preparation of a biological monitoring report; on-site habitat conservation and management of equivalent or better function and value; restrictions on operation and maintenance personnel activity; compliance with the County's Noise Ordinance; implementation of a Fugitive Dust Control Plan; biological review of landscape plans; implementation of a Fire Protection Plan; and implementation of recommendations by the Avian Power Line Interaction Committee. Potential indirect impacts have been reduced to less than significant because human activity has been limited to the Project operational footprint, long-term preservation of on-site wildlife habitat movement corridor will be provided, the risk of fire has been reduced, and release of exotic plants and animals has been minimized.