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Biological Resources Report for the Tierra del Sol Solar Major Use Permit PDS2012-3300-12-010, Rezone PDS2012-3600-12-005 Environmental Review Number PDS2012-3910-120005 Boulevard, San Diego County, California

Prepared for the County of San Diego

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DECEMBER ~~2013~~2014

Printed on 30% post-consumer recycled material.

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GLOSSARY OF TERMS AND ACRONYMS

ACOE	U.S. Army Corps of Engineers
APN	Assessor's Parcel Number
BLM	Bureau of Land Management
BMO	Biological Mitigation Ordinance
BMP	Best Management Practice
BRCA	Biological Resource Core Areas
CDFG	California Department of Fish and Game
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
CSS	Coastal Sage Scrub
CWA	Clean Water Act
EO	Executive Order
FESA	Federal Endangered Species Act
GIS	Geographic Information System
GPS	Global Positioning System
IID	Imperial Irrigation District
MBTA	Migratory Bird Treaty Act
MSCP	Multiple Species Conservation Program
MUP	Major Use Permit
NCCP	Natural Communities Conservation Plan
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
OHWM	Ordinary High Water Mark
RDA	Rural Development Area
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service

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SUMMARY

The proposed Tierra Del Sol Solar Project consists of two major components: 1) the creation of a 420-acre solar energy system (solar farm site); and 2) a dual circuit 138kV gen-tie transmission line (gen-tie alignment site) to connect the energy system to the existing Boulevard rebuilt substation. The proposed project is within the unincorporated communities of Tierra del Sol and Boulevard in southeast San Diego County. Vegetation mapping of the 420-acre solar farm site was conducted by Dudek biologists in October 2011 and revised in June 2012. Focused botanical surveys of the solar farm site were conducted by Dudek within the solar farm site in October 2011, April 2012, and June 2012. A formal jurisdictional delineation was conducted by Dudek for the solar farm site in March 2012. Vegetation mapping of the gen-tie alignment was conducted by Dudek biologists in February and April 2013 and a formal jurisdictional delineation was conducted in February, March and April 2013. Focused botanical surveys were conducted within the gen-tie alignment portion in April, June, and October through November 2013. Focused surveys for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) were conducted in the spring of 2012 on the solar farm site and the spring of 2013 for the gen-tie alignment. A raptor habitat assessment for the solar farm site was conducted in winter 2011/2012. 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 species composition and general physiognomy twelve native plant communities were identified on the 420-acre solar farm site: montane buckwheat scrub (41.0 acres), disturbed montane buckwheat scrub (2.3 acres), montane buckwheat scrub/red shank chaparral (2.0 acres), big sagebrush scrub (16.2 acres), granitic northern mixed chaparral (68.2 acres), granitic northern mixed chaparral/montane buckwheat scrub (13.3 acres), granitic chamise chaparral (177.0), granitic chamise chaparral/montane buckwheat scrub (2.2 acres), red shank chaparral (68.5 acres), coast live oak woodland (0.9 acre), scrub oak chaparral (6.0 acres), and open water (0.1 acres). Disturbed land (21.9 acres) also covers a small portion of the site. Based on a jurisdictional delineation, there are no areas identified as jurisdictional under U.S Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game (CDFG) or the County's Resource Protection Ordinance (RPO) (County of San Diego 2007) within the solar farm site.

Based on species composition and general physiognomy nine native plant communities were identified within the 210-acre gen-tie alignment: big sagebrush scrub (0.9 acres), montane buckwheat scrub (18.2 acres), granitic northern mixed chaparral (113.2 acres), red shank chaparral (38.6 acres), scrub oak chaparral (3.7 acres), coast live oak woodland (6.6 acres), disturbed coast live oak woodland (3.8 acres), southern willow scrub (0.5 acres), and wet montane meadow (0.07 acres). One non-native vegetation community, non-native grassland (7.7 acres), and two unvegetated land covers, urban/developed (4.8 acres) and disturbed land (11.7

acres) were also mapped with the gen-tie project area. Based on a jurisdictional delineation, there are non-wetland waters (i.e., stream channels), one wetland jurisdictional under ACOE, RWQCB, CDFW, and County RPO, and three wetlands under the jurisdiction of CDFW and the County RPO (County of San Diego 2007) within the gen-tie alignment site.

Focused plant surveys for the solar farm resulted in the detection of six sensitive plant species: Jacumba milk-vetch *(Astragalus douglasii* var. *perstrictus)*, Tecate tarplant (*Deinandra floribunda*), Tecate cypress (*Hesperocyparis forbesii*), sticky geraea (*Geraea viscida*), desert beauty (*Linanthus bellus*), and pride of California (*Lathyrus splendens*). Focused surveys within the gen-tie alignment resulted in the detection of Jacumba milk-vetch, desert Beauty, sticky geraea, and Tecate tarplant.

Habitat assessments for the following wildlife species were conducted within the 420-acre solar farm site in 2012: burrowing owl (*Athene cunicularia*), ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), peninsular bighorn sheep (*Ovis canadensis*), flat-tailed horned lizard (*Phyrnosoma mcallii*), alkali skipper (*Pseudocopaeodes eunus eunus*), and Colorado desert fringe-toed lizard (*Uma notata*).

There will be direct impacts to a total of 418.5 acres of vegetation communities on the solar farm site, which includes permanent direct impacts to 396.3 acres of special-status upland vegetation communities. For the gen-tie alignment, there will be a total of 11.3 acres of direct impacts, which includes permanent direct impacts to 9.9 acres of special-status upland vegetation communities as a result from vegetation removal and underground digging 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 wetlands and waterways; and 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 429.8 acres of vegetation communities, and mitigation for several 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.

1.0 INTRODUCTION

1.1 Purpose of the Report

This biological resources report is to provide 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 sensitive 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) *Guidelines for Determining Significance and Report Format and Contents Requirements* (County of San Diego 2010a) ("County Requirements"), and the County's Resource Protection Ordinance (RPO) (County of San Diego 2007).

1.2 Project Location and Description

The proposed Tierra Del Sol Solar Farm project (Proposed Project) incorporates two components/sites: 1) the solar farm site, and 2) the gen-tie alignment site. The 420-acre solar farm site includes Assessor's Parcel Numbers (APNs) 658-090-31-00, 658-090-54-00, 658-090-55-00, 658-120-03-00, and 658-120-02-00The project is located in the unincorporated communities of Tierra Del Sol in southeast San Diego County. The project is located south of Interstate 8 (I-8) within private lands located adjacent to the U.S./Mexico Border in eastern San Diego County, California (Figure 1). The project is situated south of Tierra Del Sol Road and immediately north of the U.S./Mexico Border and is traversed by four 150-foot-tall steel lattice towers that support the 500-kilovolt (kV) Southwest Power Link (Figure 2). The solar farm site is undeveloped, but has remnants of some small buildings near the western portion and middle of the study area. The entire solar farm site is fenced, including the U.S./Mexico border fence along the southern portion of the study area. The area is accessed through locked gates and dirt roads that traverse the study area. The gen-tie alignment site includes areas of undeveloped land as well as rural residential properties. Existing dirt access roads traverse throughout the study area and provide access to the sites. The entire project is within the future East County Multiple Species Conservation Program (ECMSCP) Plan Area; this area is subject to evaluation of consistency with the ECMSCP Planning Agreement (County 2008). This evaluation is provided in Section 7 of this report.

The proposed project would produce up to 60 megawatts (MW) of solar energy and would consist of approximately 2,657 concentrating photovoltaic (CPV) dual axis trackering systems ("trackers") on 420 acres in southeastern San Diego County i the community of Tierra Del Sol,

California. The project will include the installation of a dual circuit 138 kV overhead/underground gen-tie line connecting the solar farm substation to the Rebuilt Boulevard Substation. As proposed, the project will be developed in two main phases. Phase I would include the construction and operation of 45 MWs on approximately 330 acres. Phase II would consist of the construction and operation of 15 MWs on approximately 90 acres. In addition to these two main phases, the proposed project also includes the construction and installation of the approximately 0.5 mile gen-tie line. The project includes a Major Use Permit (MUP) to authorize a Major Impact Utility Pursuant to Sections 1350, 2705, and 2926 of the County of San Diego's Zoning Ordinance. The project will also require a Rezone to remove Special Area Designator "A" and ensure compliance with Section 5100 of the County's Zoning Ordinance. An Agricultural Preserve Cancellation will also be required to develop the project site as proposed.

Each individual CPV tracker is are approximately 48 feet across by 25 feet tall. Each CPV tracker would be mounted on a 28-inch steel mast (steel pole) which would be supported by either (1) inserting the mast extending it into the ground up to 20 feet and encasing it in concrete, (2) vibrating the mast into the ground up to 20 feet deep, or (3) attaching the mast to a concrete foundation sized to adequately support the CPV tracker based on wind loading and soil conditions at the site. The preferred method would be to set the mast by vibratory pile driving methods depending upon soil conditions.

In its most vertical position and depending on foundation design, the top of each tracker would not exceed 30 feet above grade, and the lower edge would not be less than 1 foot above ground level. In its horizontal "stow" mode (for high winds), each CPV tracker would have a minimum ground clearance of 13 feet 6 inches.

Individual CPV trackers would be installed and arranged into building blocks, or groups, with each building block consisting of a DC to AC inverter. Power from each building block would be delivered to an inverter station through a 1,000 volt DC underground collection system. This collection system would be separated into three 34.5 kV underground collection circuits, each delivering approximately 20 MW of power to the Rebuilt Boulevard Substation, and have a construction footprint of a trench approximately one to two feet in width and a depth of up to four feet.

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FIGURE 1

Regional Map

DRAFT BIOLOGICAL RESOURCES REPORT - TIERRA DEL SOL SOLAR FARM

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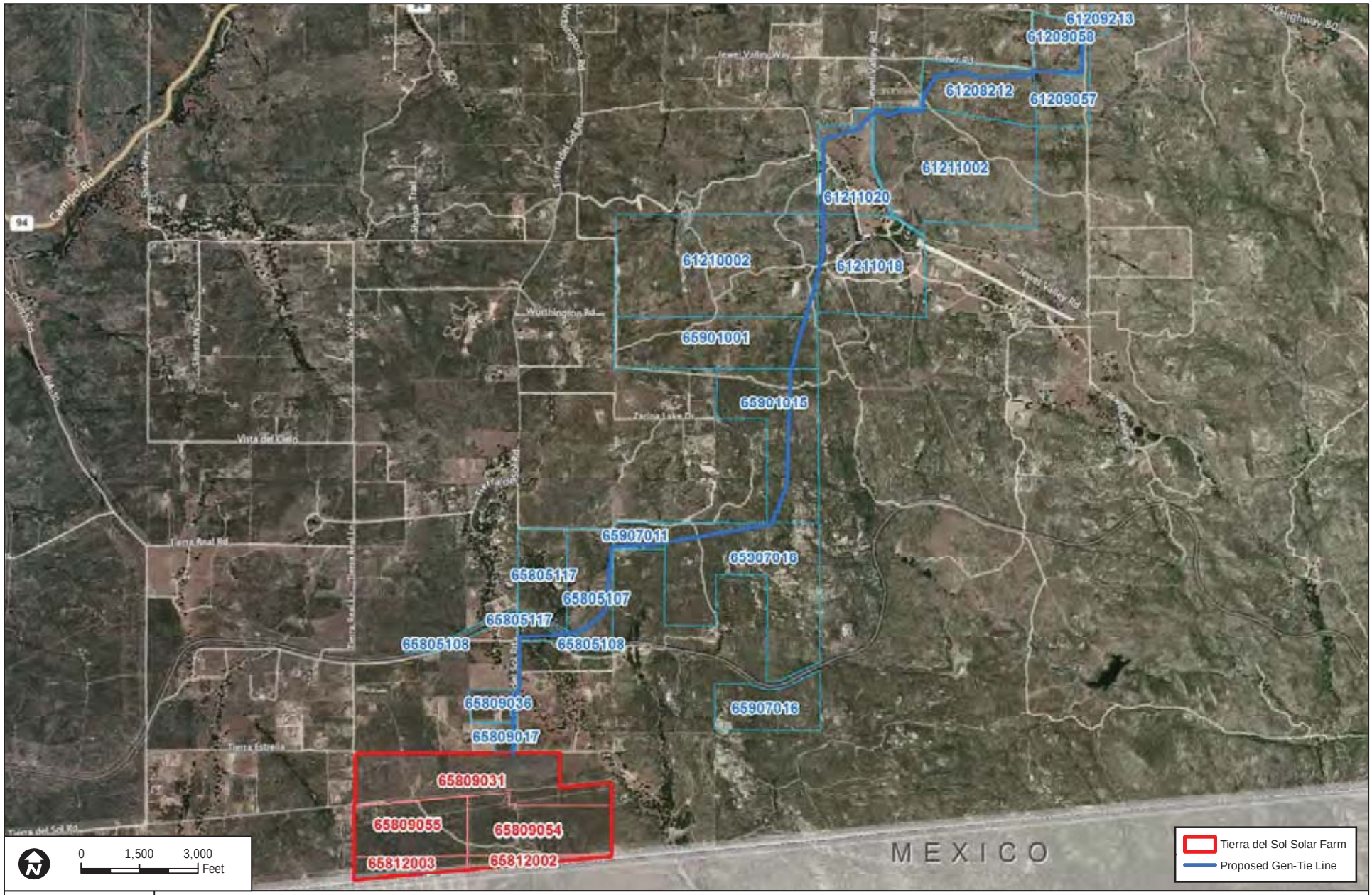

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SOURCE: AECOM 2013; Soitec 2013; SanGIS 2012; Bing Maps

FIGURE 2

Vicinity Map

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Each of the two 34.5 kV underground branch circuits associated with Phase I would connect to a 34.5 kV overhead trunk line on the project site for delivery to the Rebuilt Boulevard Substation. These two collection circuits for Phase I would be run overhead on an above ground trunk line adjacent to the south side of the Southwest Powerlink right of way. These trunk lines would be approximately 1.2 miles long and deliver a total of 60 MW. The above ground trunk line would utilize steel poles and would be approximately 50-75 feet high and spaced about 300-500 feet apart. The minimum ground clearance of the overhead 34.5 kV lines would be 30 feet. The approximate maximum hole dimensions for steel pole foundations would be 24 inches in diameter and approximately 20 feet deep. Phase II will connect to the Project substation entirely via one 34.5 kV underground branch circuit and the underground 34.5 kV collection system.

The project will include a private 34.5/138 kV step-up substation site, that would be construction in the northeast corner of the project site and adjacent to the O&M annex site. This substation would increase the voltage received from the overhead and underground collector system from 34.5 to 138 kV, and isolate the equipment in the event of an electrical short circuit or for maintenance. Switching and transformer equipment as well as a control room and a parking area for utility vehicles would be located within the 3-acre substation site and for security purposes (and to allow for nighttime inspections) lighting would be installed near substation equipment, the control shelter, and on the entrance gates.

A 4-acre operations and maintenance (O&M) annex site would be located adjacent to the substation site and would be used for storage, employee operations, and maintenance of equipment. The 7,500 square foot single story building would also include administrative and operational offices, warehouse storage and lavatory facilities. . It is anticipated that in-place tracker washing would occur every 6 to 8 weeks during evening or nighttime hours, when all tracker assemblies are aligned in a vertical westerly facing direction.. Washing of the tracker panels would be undertaken using a IPC Eagle Wash Station which would be towed by a pick-up, ATV, or Cushman electric cart. On-site water storage tanks may be installed to facilitate washing.

The dual circuit 138 kV gen-tie line would consist of a partially underground and partially overhead alignment from the Tierra del Sol site to the Rebuilt Boulevard Substation. The underground alignment of the gen-tie would start at the on-site substation and head northward to Tierra del Sol Road, along the County right-of-way for approximately 0.6 miles, then it would be routed directly east for approximately 0.3 miles. A transition pole would be constructed at this point, where the gen-tie would transition from an underground line to an overhead line. The overhead alignment would extend approximately 3.5 miles before returning underground for the final 1.5 miles to the Rebuilt Boulevard Substation.

Underground Duct Bank –The underground portion of the dual circuit 138 kV gen-tie line would be installed in a concrete duct bank, pursuant to County of San Diego and SDG&E Standards, within the County right-of-way that would terminate at the Rebuilt Boulevard Substation. The approximately 36-inch-wide, 60-inch-tall duct bank would contain six 6-inch diameter conduits. The remaining underground portions of the dual circuit 138 kV gen-tie line would be located on private property and would be directly buried with conductor rated for direct burial.

Gen-tie Alignment Structures – The overhead portion of the gen-tie alignment would require the setting of new steel transmission poles and conductors installed along the poles to deliver power from the project site to the Rebuilt Boulevard Substation. The span lengths between poles would be dependent on terrain. The cable span lengths would generally range from 500 to 1,400 feet. Given the overhead portion of the gen-tie alignment is approximately 3.5 miles, it is anticipated that the gen-tie would require construction of approximately 20–25 steel poles with a height of 125 to 150 feet. The exact amount would depend on final engineering design.

Project construction would consist of several phases including site preparation, development of staging areas and site access roads, solar CPV tracker assembly and installation, and construction of electrical transmission facilities. After site preparation, initial project construction would include the development of the staging and assembly areas, the grading of site access roads for installation of the CPV trackers, and the construction/installation of gen-tie line. The Project would be constructed over a period of up to approximately 14 months, which includes Phases I, II and construction of the gen-tie line.

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) (2012 and 2013), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFG 2012a and CDFW 2013a), California Native Plant Society's (CNPS) *Online Inventory of Rare and Endangered Vascular Plants* (2012 and 2013), San Diego Plant Atlas (SDNHM 2012a), San Diego Bird Atlas (SDNHM 2012b), and survey results for the ECO (East County) transmission line project (CPUC and BLM 2011). 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 sensitive 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).

Target sensitive biological resources present or potentially present on site were identified by the County Planning and & Development Services (PDS) staff via a letter, dated January 12, 2012 (County of San Diego 2012). 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–b) 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 NCCP because the project is designed in accordance with the Preliminary Conservation Objectives outlined in the Planning Agreement for ECMSCP (County 2008). These objectives are and project applicability/compliance are provided in Section 7.0.

1.3.2 Field Reconnaissance

Between October 2011 and November 2013, Dudek conducted vegetation mapping, rare plant surveys, a jurisdictional delineation, and focused surveys for Quino checkerspot butterfly (*Euphydryas editha quino*) for the proposed project. Tables 1-1A through C lists the dates, conditions, and survey focus for each survey performed.

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

Per the DPLU scoping letter, dated January 12, 2012 (County of San Diego 2012), focused surveys or wildlife habitat assessments for the following wildlife species were conducted within the 420-acre proposed solar farm site in 2012 where appropriate: Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), golden eagle (*Aquila chrysaetos*), turkey vulture (*Cathartes aura*), and Quino checkerspot butterfly. The winter raptor survey/assessment were conducted in January 2012. The Quino checkerspot butterfly surveys were conducted in March and April 2012. Additional focused surveys within the gen-tie alignment site for quino checkerspot butterfly were conducted March through April 2013.

The County's scoping letter also identified plant species that require focused surveys. These species include Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*), sticky geraea (*Geraea viscida*), Tecate tarplant (*Deinandra floribunda*), Mexican hulsea (*Hulsea mexicana*),

California hulsea (*Hulsea californica*), desert beauty (*Linanthus bellus*), and southern jewelflower (*Streptanthus campestris*). Fall, spring and summer surveys for rare plants within the 420-acre solar farm site have been completed. Spring, summer and fall focused surveys have been completed for the gen-tie alignment a. In addition, desert beauty and Tecate tarplant populations were reviewed on the solar site, as well as the Rugged site, in spring and fall 2013 to determine the how the current year species abundance compares to surveys conducted in 2011 (when spring surveys were conducted on the Rugged site) and 2012 (when spring surveys were conducted on the solar site).

Table 1-1A
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
10/7/11	0900–1500	BAS, KCD	Reference Plant Check	n/a
10/10/11	0935–1715	BAS, CJF, KCD, VRJ	Rare Plant Survey, Vegetation Mapping	Clear, 65ºF, 0 mph winds
10/11/11	0920–1705	BAS, CJF, KCD, PCS	Rare Plant Survey	Clear, 72–84ºF, 1–2 mph winds
10/12/11	0810–1615	BAS, CJF, KCD, PCS	Rare Plant Survey, Vegetation Mapping	Clear, 72–80ºF, 2-3 mph winds
10/13/11	0730–1205	BAS, KCD	Rare Plant Survey	Clear, 66–85ºF, 1–3 mph winds
1/29/2012	0710-1430	BAO	Raptor Survey and Assessment	Cloudy to partly cloudy, 45–67ºF, 5–3 mph winds
3/9/2012	0845–1445	TSL, VRJ	Jurisdictional Delineation	Clear, 60–64ºF, 5–10 mph winds
4/10/12	0900-1730	BAS, KCD, PCS, CJF	Rare Plant Survey	Clear, 73ºF, 1-5 mph winds
4/12/12	0830-1815	BAS, KCD, PCS, CJF	Rare Plant Survey	Cloudy to partly cloudy, 44–43ºF, 2–10 mph winds
6/27/12	0930-1630	BAS, KCD, PCS, CJF	Rare Plant Survey	0-10% cloud cover, 81-86ºF, 0-1 mph winds
6/28/12	0730-0830	BAS, KCD, PCS, CJF	Rare Plant Survey	Clear, 73-78ºF, 0-1 mph winds
2/25/13	0930-1530	CJF, EAW	Vegetation Mapping	0% clouds, sunny; 2-8mph winds; 57-60F.
2/22/13	0900-1400	PCS, DM	Vegetation Mapping	Not recorded
2/27/13	0900-1650	BAS, TSL	Jurisdictional Delineation	10-25% clouds, sunny; 42-53ºF; 2-10 mph winds
3/4/13	0830-1200	EAW, VRJ	Jurisdictional Delineation	5-10% clouds, sunny; 52-68ºF; 0-5 mph winds
4/8/13	0900-1600	EAW, VRJ, DAM, AT	Jurisdictional Delineation/ Rare Plant Survey	90-100% clouds, cloudy; 40-50ºF; 15-20mph winds
4/10/13	0830-1740	EAW, VRJ	Jurisdictional Delineation/ Rare Plant Survey	0% clouds, sunny; 48-70ºF; 0-8mph winds
6/17/13	0830-1600	DG, AT	Rare Plant Survey	0% clouds, sunny; 68ºF; 0-5mph winds
6/20/13	0830-1600	DG, AT	Rare Plant Survey	0% clouds, sunny; 68ºF; 8-12mph winds
6/26/13	810-1415	DG, DM	Rare Plant Survey	0% clouds, sunny; warm

Table 1-1A
Schedule of Surveys

Date	Hours	Personnel	Focus	Conditions
9/23/13	1130-1500	BAS	Reference Plant Check	0% clouds, sunny; 80-83ºF; 0-4 mph winds
9/24/13	0900-1530	BAS, SG	Rare Plant Survey	0% clouds, sunny; 75-83ºF; 1-4 mph winds
9/30/13	845-1500	KCD, EW	Rare Plant Survey	0% clouds, sunny; 61-88ºF; 0-3 mph winds
10/1/13	0805-1425	KCD, EW	Rare Plant Survey	0% clouds, sunny; 66-86ºF; 1-8 mph winds
10/2/13	0820-1430	KCD, EW	Rare Plant Survey	0% clouds, sunny; 66-82ºF; 0-5 mph winds
10/7/13	0900-1600	BAS, HAM	Rare Plant Survey	5-30% clouds; 62-79ºF; 0-5 mph winds
10/8/13	0745-1100	BAS, HAM	Rare Plant Survey	0% clouds, sunny; 56-68ºF; 1-4 mph winds
11/8/13	0817-1042	EW, KCD	Rare Plant Survey	0% clouds, sunny; 58-72ºF; 3 mph winds

AT = Andy Thomson
BAS = Britney A. Strittmater
BAO = Brock A. Ortega (TE-813545-5)
CJF = Callie J. Ford
DG = Doug Gettinger
DM = Danielle A. Mullen
EW = Emily A. Wier
HAM = Heather A. Moine
KCD = Kathleen C. Dayton
PCS = Patricia C. Schuyler
SG = Scott Gressard
TSL = Thomas S. Liddicoat (TE-139634-2)
VRJ = Vipul R. Joshi (TE-019949-0)

Table 1-1B
Schedule of Focused Quino Surveys for the Tierra del Sol Solar Farm Site

Survey Area	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
Week 1						
1	3/16/12	1130–1345	61–66	0–0	1–5 with gusts to 10 mph	JDP, CJF, PCS
2	3/16/12	0915–1130	56–61	0–0	1–3 to 1–5; gusts to 8–10	JDP, CJF, PCS
3	3/15/12	0915–1210	62–68	0–0	0–1 to 1–4	JDP, CJF
4	3/16/12	1345–1515	66–68	0–10	1–5 with gusts to 10	JDP, CJF, PCS
5	3/15/12	1210–1530	68–72	0–0	1–4 to 2–6	JDP, CJF
Week 2						
1	3/20/12	0940–1420	60–63	0–0	5–7 to 6–10, gusts to 10–12	PML
2	3/21/12	1000–1430	64–66	0–2	4–8 to 3–6, gusts to 9–15	PML
3	3/22/12	1020–1520	71–73	0–0	2–5 to 2–4, gusts to 5–12	PML
4	3/22/12	0930–1400	70–72	0–0	1–4 to 0–4	JDP
5	3/22/12	1045–1555	68–73	0–0	0–3	BAO
Week 3						
1	3/27/12	0920–1400	60–66	0–0	1–3 to 4–6, gusts to 7–12	PML

Table 1-1B
Schedule of Focused Quino Surveys for the Tierra del Sol Solar Farm Site

Survey Area	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
2	3/28/12	0910–1420	60–67	10–10	1–3 to 3–5, gusts to 6–10 mph	PML, CJF, PCS
3	3/29/12	0915–1420	62–74	30–10	2–5 to 2–4, gusts to 5–8 mph	PML
4	3/30/12	0930–1430	68–71	0–30	0–3 to 1–5 mph, gusts to 8	JDP
5	3/29/12	0930–1430	60–74	40–10	2–5, gusts to 8 mph	BAO, CJF, PCS
Week 4						
1	4/6/12	1030–1430	67–70	50–40	3–5 to 2–5, gusts to 8	KJM, CJF
2	4/4/12 4/6/12	1200–1600 0930–1030	67–68 58–62	2–2 0–0	0–5 and 3–5, gusts to 10 3–5, gusts to 8	VRJ VRJ
3	4/6/12	1030–1530	60–70	overcast	3–5, gusts to 10	BAO
4	4/6/12	1030–1500	62–64	0–0	3–5 to 0–5, gusts to 8 mph	VRJ
5	4/4/12	0930–1430	62–75	5–30	0–1 to 1–3, gusts to 5 mph	BAO, CJF, PCS
Week 5						
1	4/15/12	0930–1445	65–76	10–0	0–3 to 3–5	BAO
2	4/16/12	1230–1730	72–67	0–0	0–3 and 0–4, gusts to 8	VRJ
3	4/16/12	0850–1515	58–69	0–0	8–10 to 6–10	AMH
4	4/18/12	0905–1515	65–77	0–0	1–3 to 6–9, gusts to 12 mph	AMH, CJF
5	4/18/12	1230–1730	73–70	0–20	2–6 to 3–6	BAO, PCS

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

Table 1-1C
Schedule of Focused Quino Surveys for the Gen-tie Alignment

Week	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
Survey Area 1						
1	3/26/13	09:00–12:00	61–72	0–0	0–0 to 0–5	VRJ
2	3/29/13	10:45–15:30	74–76	80–100	3–7 to 3–8	PML
3	4/4/13	10:10–14:30	70–74	80–70	2–5 to 1–3, gusts to 4–7	PML, PCS
4	4/12/13	10:00–16:00	69–76	10–0	3–6 to 4–8, gusts to 9–15	PML
5	4/24/13	11:25–15:00	82–84	50–30	3–8 to 5–12	JDP
Survey Area 2						
1	3/15/13	09:00–16:13	70–82	60–30	0–5 to 4-8; gusts to 10	JDP
2	3/27/13	09:50–16:15	66–73	50–30	1–3 to 3–8	AMH

Table 1-1C
Schedule of Focused Quino Surveys for the Gen-tie Alignment

Week	Date	Time	Range of Conditions			Personnel
			Temperature Range (°F)	*Percent Cloud Cover (% cc)*	*Wind (miles per hour (mph))*	
3	3/28/13	08:40–14:50	72–75	10–30	1–4 to 3–6	PML
4	*	N/A	N/A	N/A	N/A	N/A
5	4/11/13	08:50–15:20	63–73	5–0	1–5 to 3–7, gusts to 8–15	PML
6	4/18/13	08:45–15:20	61–63	0–0	2–4 to 4–6, gusts to 7–20	PML
Survey Area 3						
1	3/16/13	08:50–16:00	70–82	70–10	0–3; gusts to 5 mph	BAO
2	3/27/13	10:00–15:40	60–68	40–20	6–8 to 6–8, gusts to 6–8	KJM
3	4/3/13	08:30–14:30	65–86	0–0	0–3 to 1–5, gusts to 7–10	JDP
4	4/5/13	08:30–15:30	64–76	0–5	1–3 to 2–6, gusts to 10	JDP
5	4/17/13	08:30–14:30	62–86	0–0	2–5 to 3–10, gusts to 10–18	JDP

* Survey not conducted due to adverse weather conditions.

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 a 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).

1.3.4 Flora and Fauna

Focused surveys for special-status plants have been conducted for the solar farm site and were implemented in three separate passes to record species that have different blooming periods throughout the year. Three passes of focused surveys for special-status plants have been conducted within the gen-tie alignment to record species that have different blooming periods throughout the year. During these surveys, 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 2012). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2012) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2012). A list of plant species observed within the solar farm and gen-tie alignment sites during initial surveys is presented in Appendix A.

Focused surveys for the federally and state-endangered Quino checkerspot butterfly were completed for the solar farm site in March and April 2012 and March and April 2013 for the gen-tie alignment. In addition to butterfly species, all wildlife species detected during the field surveys by sight, calls, tracks, scat, or other signs were recorded. Binoculars (7×50 magnification) 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 of animals follow Crother (2008) for reptiles and amphibians, American Ornithologists' Union (2012) and Banks et al. (2002–2008) for birds, North American Butterfly Association (NABA; 2001–2004) for butterflies, and Wilson and Reeder (2005) for mammals. A list of wildlife species observed within the project study area is presented in Appendix B.

1.3.4.1 Focused Surveys for Special-Status Plants

Dudek conducted late-fall plant surveys within the 420-acre solar farm site to maximize detection of special-status plants in October 2011; subsequent spring and summer surveys were conducted in the solar farm site during April and June 2012 (Table 1-1A). Spring and summer surveys have been completed for the gen-tie alignment and a late-fall plant survey was conducted in September, October, and November 2013 to maximize detection of special-status plants (Table 1-1A).

The fall survey focused on detection of the late-blooming Tecate tarplant, Mount Laguna aster (*Dieteria asteroids* var. *lagunensis*), and San Bernardino aster (*Symphyotrichum defoliatum*). A reference population for each of the target species was visited by Dudek biologists on October 7, 2011, and on September 23, 2013, for the Tecate tarplant. These populations were identifiable and in flower, thereby confirming that the species would have been detectable within the solar farm site during the dates of the surveys (Table 1-1A). The reference populations represent the nearest, accessible, well-identified, known locations of these species. The San Bernardino aster was located near Mount Laguna Village at El Centro Ravine in the Cleveland National Forest. Also located in the Cleveland National Forest, the Mount Laguna aster reference population was located in the Wooded Hill area at the Laguna Recreation Area. The Tecate tarplant was found on Rough Acres Ranch near Boulevard in 2011 and on the solar site, as well as the Rugged site in 2013.

The spring surveys focused on desert beauty, California hulsea, Mexican hulsea, and other spring-blooming species. A reference population check for desert beauty was visited by Dudek biologists on March 28, 2012, near Rough Acres Ranch near Boulevard where it was in bloom. For the 2013 survey, a reference population check was conducted on April 4, 2013, within known populations on Rugged and the solar site.

The summer passes focused on sticky geraea and Jacumba milk-vetch as well as other summer-blooming species. Jacumba milk-vetch was observed during both the spring 2012 and 2013 survey passes but was not mapped until the summer survey pass since it was not yet in bloom. Reference population checks for Jacumba milk-vetch and sticky geraea mapped in 2012 and 2013, Rough Acres Ranch, Campo and Rugged, were completed 2 weeks prior to the focused survey to ensure the species were blooming.

Focused surveys were conducted at the appropriate phenological stage of the plant (blooming and fruiting) to detect and identify the target species. Field survey methods conformed to CNPS *Botanical Survey Guidelines* (CNPS 2001); *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000); and *General Rare Plant Survey Guidelines* (Cypher 2002). The survey was conducted by walking meandering transects to detect special-status species. Special-status plant observations were mapped in the field using a Global Positioning System (GPS) receiver to record the location of special-status plant populations. The special-status plant observations were downloaded by Dudek geographic information systems (GIS) technicians, Tyler Friesen and Andrew Greis, using ArcGIS software. Generally, numbers of individuals were counted in the field and reported as ranges including the following: 1 to 10; 11 to 50; 51 to 100; 101 to 500; 501 to 1,000; 1,001 to 5,000; and greater than 10,000. Some occurrences with few (e.g., less than 100) individuals present were counted and reported as a number versus a range. Point or polygon data were collected for each occurrence of individuals.

Special-status plant locations were supplemented by data collected for the ECO transmission line. Data was collected throughout the alignment, and part of the alignment overlaps with the mitigation lands. ECO data within the boundary of the mitigation lands were reviewed and supplemented Dudek data in the eastern and southern reaches of the mitigation lands.

1.3.4.2 Focused Surveys for Quino Checkerspot Butterfly

Focused Quino checkerspot butterfly surveys, for the proposed solar farm site, were conducted over five visits within a 5-week period between March 9 and April 15, 2011. Surveys were conducted by Quino checkerspot butterfly permitted biologists Anita M. Hayworth, PhD (TE781084), Brock A. Ortega (TE813545-5), Jeff D. Priest (TE840619-2), Kam J. Muri (TE051250-0), Paul M. Lemons (TE051248-2), Vipul R. Joshi (TE019949-0), Callie J. Ford

(independent investigator), and Patricia C. Schuyler (independent investigator) in accordance with current USFWS protocol (USFWS 2002a, 2002b).

The proposed solar farm site was divided into five survey areas, and the gen-tie alignment was divided into three 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 habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, hilltops, ridgelines, rocky outcrops, trails and dirt roads). Survey routes were arranged to thoroughly cover the survey area at a rate of no more than 10–15 acres per hour.

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 measured 4 to 6 feet above ground level; temperature in the shade at ground level less than 60°F on a clear, sunny day; or temperature in the shade at ground level less than 70°F on an overcast or cloudy day). 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 (7x50 and 10x42) 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 420-acre solar farm site was conducted in January 2012 for raptors, including golden eagle, prairie falcon, Cooper's hawk, sharp-shinned hawk, turkey vulture and red-shouldered hawk. The single-visit survey included traversing all roads on site while searching for potentially suitable nesting resources (e.g., trees, large rock outcroppings). Nests were mapped if present. During this effort, all portions of the site were reviewed for suitability. In addition, the biologist sat at four different locations during the day to search for large birds. A scope (15x to 60x magnification) and binoculars (10x40 magnification) were used to identify observed species. The biologist stayed at each location for ~~a minimum of~~up to 2 hours. While there, the biologist used a data sheet to note observed species, direction of flight, and behavior. Special-status species were mapped when observed.

A specific wintering raptor habitat assessment was not conducted for the gen-tie alignment because Dudek had previously conducted bird utilization counts for raptors within the Jewel Valley site, which covers much of the gen-tie alignment. Biologists conducted the bird utilization

counts, which focused on identifying raptors, height, and direction of flight, behavior, and duration of observation. The surveys included the Jewel Valley site and within an 800-meter buffer and. Surveys were conducted from May 2010 through July 2012, and therefore offers a comprehensive picture of raptor use of the lands proposed for the gen-tie alignment can be made site use by raptors. The assessment was based on these visits surveys.

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.

1.3.5 Jurisdictional Wetlands Delineation

Dudek conducted a formal jurisdictional wetlands delineation in March 2012 for the solar farm site. A formal jurisdictional delineation was completed in February, March and April 2013 for the gen-tie alignment site. The 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 2008a). 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 (Environmental Laboratory 1987; ACOE 2008; ACOE and EPA 2008) was conducted for the solar farm site (Appendix G). The gen-tie alignment site is planned to be processed as a preliminary jurisdictional determination and therefore would not require conformance with the Rapanos Guidance (i.e., no significant nexus determination will be conducted).

Pursuant to the federal Clean Water Act (CWA), ACOE and Regional Water Quality Control Board (RWQCB) jurisdictional areas 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 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 traditional navigable "waters of the United States" (TNW), adjacent wetlands, and relatively permanent waters (RPW) 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 were identified 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).

To assist in the determination of jurisdictional areas within the solar farm site, data was collected at three sampling points. Data was collected at eight sampling points within the gen-tie alignment site. Hydrology, vegetation, and soils were assessed, and sampling data were collected on approved ACOE forms. The site was evaluated for evidence of an ordinary high water mark (OHWM), surface water, saturation, wetland vegetation, and nexus to a TNW. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations. Additionally, a significant nexus determination was completed and an Approved Jurisdictional Determination Form was completed.

1.3.6 Survey Limitations

Focused surveys for potentially occurring special-status plants have been conducted for the solar farm site (i.e., spring, summer, and fall) in order to document rare plants that have different seasonal blooming periods. Focused surveys for special-status plants within the gen-tie alignment site have been conducted (i.e., spring, summer, and fall) in order to document rare plants that have different blooming periods. The nearest weather station is located in Campo, California, and generally receives an average rainfall of approximately 15 inches per year (Western Regional Climate Center 2013). Precipitation water year (i.e., July 1 to June 30) amounts for Campo from 2010 to 2011 were recorded at 21.03 inches, from 2011 to 2012 were recorded at 15.84 inches, and from 2012 to 2013 were recorded at 11.21 inches.

A reference population for each of the target species for the fall 2011 survey was visited by Dudek biologists on October 7, 2011. These populations were identifiable and in flower, thereby confirming that the species would have been detectable during the dates of the surveys. However, the recorded population size for San Bernardino aster was 500 to 1,000 individuals

according to a 2004 record (CDFG 2012a). The reference survey identified fewer than 20 individuals at this location in October 2011. The Mount Laguna aster reference was recorded to 9,000 individuals in 1979. During the October 2011 reference check, only one individual was identified. The Tecate tarplant, desert beauty and Jacumba milk-vetch were found on Rough Acres Ranch near Boulevard in fall 2011 and spring 2012, respectively, but at a much lower abundance (approximately 20% to 30% the size of previous observations) than in previous years' surveys. Given that rainfall amounts were at or above average for fall 2011 and spring/summer 2012 survey, but observations of reference populations showed fewer numbers than previously recorded, it is assumed the rainfall was adequate for germination of all target species in the fall of 2011 and spring/summer of 2012; however, the abundance of annuals recorded on the Tierra del Sol (TDS) site may be lower than would occur during an optimal rainfall year.

Rare plant surveys for the gen-tie alignment site were conducted to coincide with blooming periods for the target rare plant species, in April and June 2013, and fall 2013. Reference population checks were completed for each of the target species prior to conducting focused survey passes. A reference check of desert beauty was conducted within the solar site and Rugged sites on April 4, 2013. A total of 4 locations where desert beauty was mapped in 2012 on the Rugged site were re-surveyed in 2013. Three of the locations had fewer desert beauty individuals than previously recorded (between 30–90% reduction) and one location had a greater number of individuals (approximately 200% increase). Overall it is estimated that the 2013 population was approximately 70% less than the population size recorded in 2012 at the Rugged site. On the Rugged solar site, the 2013 reference survey identified only one individual within four selected sites that had a total of 314 individuals recorded in 2012. These reference site surveys indicate that the abundance of desert beauty recorded within the gen-tie alignment site in spring 2013 is likely much lower than during an average rainfall year.

A reference survey for Jacumba milk-vetch and sticky geraea was conducted within the Rugged site on June 14, 2013, and confirmed that these species were blooming and identifiable within the vicinity. Because these species are perennial, the number of individual is not expected to vary greatly from year to year and therefore population counts were not recorded for comparison with previous year counts.

A reference check of Tecate tarplant was conducted within the Rugged and Tierra del Sol sites on September 23, 2013. A total of two locations where Tecate tarplant was mapped in 2011 on the Rugged site were re-surveyed in 2013. Both of the locations had fewer Tecate tarplant individuals than previously recorded (between 99–100% reduction). Overall it is estimated that the 2013 population was less than the population size recorded in 2011 at the Rugged site. On the Tierra del Sol site, the 2013 reference survey identified only three individuals within 11 selected sites that had a total of 3,029 individuals recorded in 2012. These reference site surveys indicate

that the population size of Tecate tarplant recorded within the gen-tie alignment in fall 2013 is likely lower than what would be present during an average rainfall year.

With the exception of the surveys for Quino checkerspot butterfly, 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 E); therefore, no trapping was required. Additionally, all reptiles that were observed and the small mammal signs that were recorded during vegetation mapping, rare plant, and jurisdictional delineation surveys, including 214 person-hours of wildlife surveys, as well as vegetation mapping, rare plant surveys, and jurisdictional delineation. This was performed in accordance with County survey requirements. Wintering raptor surveys were conducted for the solar farm site in January 2012, and data on wintering raptors within the gen-tie alignment site were obtained through bird use counts conducted for another project along the alignment from May 2010 through July 2012. Nocturnal surveys were not conducted for the project. Birds represent the largest component of the vertebrate fauna, and because most are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. In contrast, daytime surveys usually result in few observations of mammals, many of which may be active at night. In addition, many species of reptiles and amphibians are nocturnal or cryptic in their habits and are difficult to observe using standard meandering transects.

Portions of the gen-tie alignment have been burned during the 2012 Shockey Fire. Vegetation in these areas were mapped per the County Guidelines, which state: "Areas recovering from fire shall be mapped using the resurgent vegetation as indicators of the probable resultant habitat. When the fire is so recent that no new vegetation has emerged, historical evidence such as aerial photos and the County's vegetation mapping information shall be used to map the habitat that was burned" (County of San Diego 2010b). Burned areas were included in all focused surveys.

1.4 Environmental Setting (Existing Conditions)

The two components of this site (i.e., the solar farm and gen-tie alignment) are directly adjacent to one another and exhibit similar site characteristics. The solar farm site is situated between approximately 3,530 and 3,740 feet above mean sea level (amsl) in elevation and the gen-tie alignment is approximately 3,400 to 3,800 amsl. Both of the project sites are relatively flat, with some gently sloping hills, but do not support much diversity in the topography of the land.

According to USDA (2012), there are three soil types found in the project area, and descriptions based on those by Bowman (1973) and the Web Soil Survey appear as follows.

The Kitchen Creek series is a member of the coarse-loamy, mixed, mesic family of Ultic Argixerolls. Kitchen Creek soils have dark brown, slightly acid, loamy coarse sand and coarse

sandy loam A horizons, and pale brown, medium acid, coarse-sandy loam B2t horizons grading to weathered granitic rock at a depth of 54 inches. Kitchen Creek soils occur on moderately to strongly sloping to rolling broad ridges that are bounded by short escarpment slopes. The Kitchen Creek soil inclusion within the project area is the loamy coarse sand, 5% to 9% slopes. They formed in residuum weathered from granitic and other acid igneous rocks. Kitchen Creek soils occur at elevations of 2,500 to 4,500 feet, and native vegetation expected on this soil type in the project area includes chamise (*Adenostoma fasciculata*) and a small amount of annual grasses.

The La Posta series has grayish brown and brown, slightly acid and neutral, loamy coarse sand A horizons, grading to weathered acid igneous rock at a depth of 29 inches. These soils occur in hilly mountainous areas that are moderately sloping to very steep. The following La Posta soil inclusions occur within the project area: La Posta loamy coarse sand, 5% to 30% slopes, eroded; and La Posta rocky loamy coarse sand, 5–30% slopes, eroded. The soils formed in residuum weathered from granitic rocks at elevations of 2,000 to 4,500 feet. La Posta soils are somewhat excessively drained with medium or rapid runoff and rapid permeability, and native vegetation expected on this soil type in the project area is mainly annual grasses and forbs, chamise, red shank (*Adenostoma sparsifolia*), manzanita (*Arctostaphylos* spp.), scrub oak (*Quercus* spp.), and a few scattered oak trees (*Quercus agrifolia*) along drainages.

The Mottsville series consists of very deep, excessively drained soils that formed in alluvium derived from granitic rocks. Mottsville soils occur on gently sloping (0–15%) alluvial fans, fan remnants, and fan aprons. Mottsville soil inclusion occurs within the project area: Mottsville loamy coarse sand, 2–9% slopes. Mottsville soils occur at elevations of 4,500– 5,300 feet. Mottsville soils have negligible or very low surface runoff, rapid or very rapid permeability, and high saturated hydraulic conductivity. Native vegetation expected on this soil type within the project area is mainly big sagebrush, other desert transition shrubs, and needlegrasses (*Stipa* spp.).

The project area generally is within the Peninsular Range in a transitional area between the coast and the desert. It is in a dry climate with average temperatures near the community of Campo ranging from approximately 34– 94°F. This community generally receives an average rainfall of less than 15 inches per year (Western Regional Climate Center 2012).

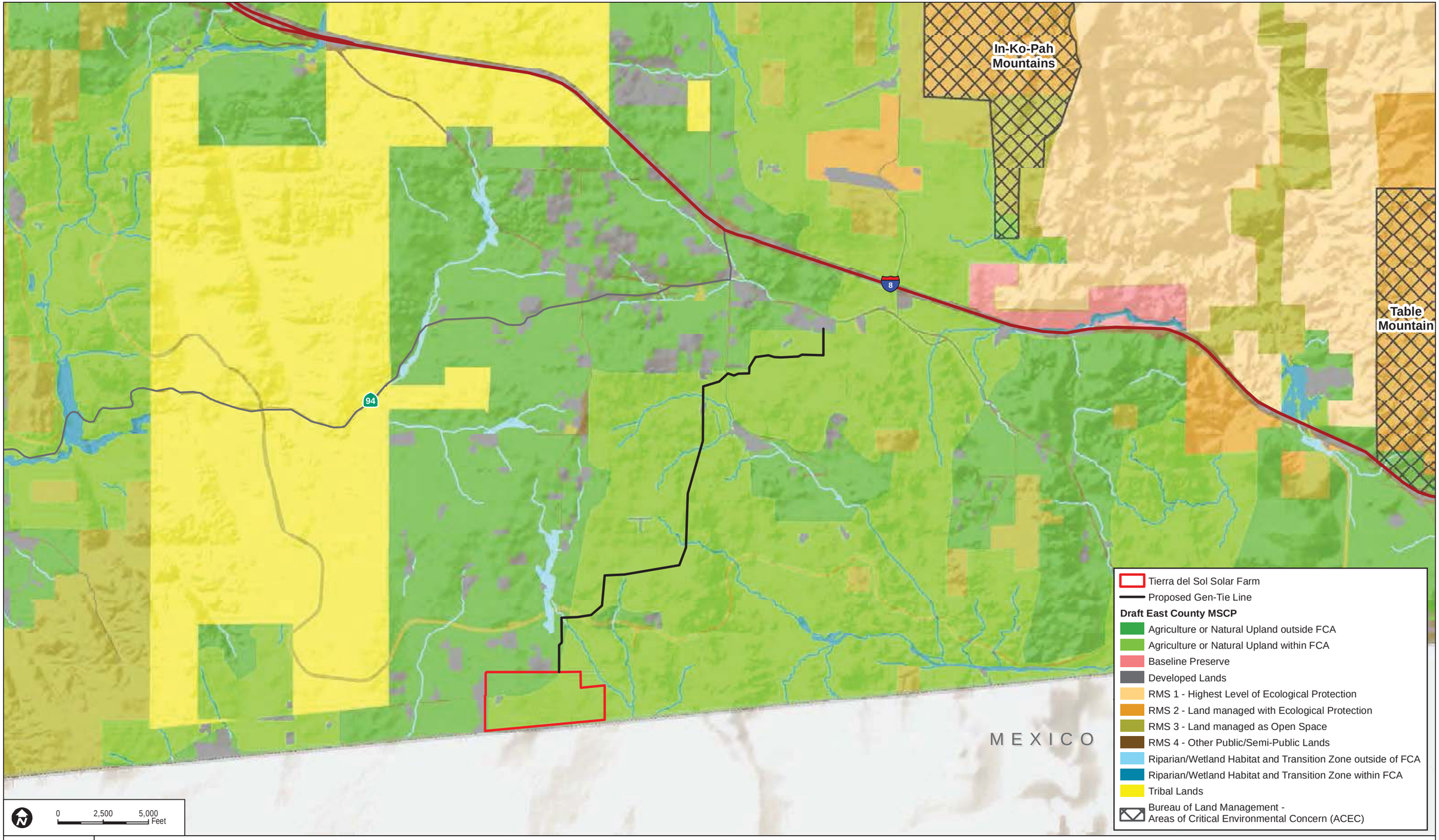
Land use on within the project area and in the surrounding areas is a mixture of undeveloped lands and rural residential areas. The project study area borders Mexico and is restricted to the south by the international border fence.

1.4.1 Regional Context

The proposed project is located in the unincorporated communities of Tierra Del Sol and Boulevard in southeast San Diego County within private lands located adjacent to the

U.S./Mexico Border (Figure 3). 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 Plan (NCCP) Act, and to contribute to the preserve system already established by the approved Multiple Species Conservation Program (MSCP).

The project study area is within the future ECMSCP; more specifically, the project area falls partially within a preliminarily delineated Focused Conservation Area (FCA) of the ECMSCP planning area, which suggests that the area has regional conservation value. Projects in this area are subject to the Planning Agreement for the ECMSCP (County 2008) which is intended to establish if their approval would have an effect on the preparation and approval of the future ECMSCP.



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SOURCE: SanGIS 2012, BLM 2010; AECOM 2013; Soitec 2013

FIGURE 3

Regional Context

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1.4.2 Habitat Types/Vegetation Communities

Twelve native vegetation communities and four non-native communities or land cover types were mapped by Dudek within the proposed project area. Native vegetation communities within the project area include big sagebrush scrub, montane buckwheat scrub (including disturbed), montane buckwheat scrub/red shank chaparral, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/ montane buckwheat scrub, red shank chaparral, scrub oak chaparral, southern willow scrub, wet montane meadow, and coast live oak woodland (including disturbed forms). One non-native vegetation community, non-native grassland, occurs within the project area. Three land cover types (non-vegetated area) occur within the project area: open water, disturbed land, and urban/developed. The vegetation communities and land cover types listed above are described as follows, their acreages are presented in Table 1-2, and their spatial distributions are presented on Figures 4A and 4B.

In September 2010, the CDFG 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 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.

CDFG'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). 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). These communities are denoted in Table 1-2 with an asterisk (*).

Table 1-2
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[1]	TDS Existing Acreage	Gen-tie Existing Acreage
Upland Scrub and Chaparral			
Big Sagebrush Scrub*	35210	16.2	0.9
Montane Buckwheat Scrub*	37K00	41.0	18.2
Disturbed Montane Buckwheat*	37K00	2.3	—
Montane Buckwheat Scrub/Red Shank Chaparral*	37K00/37300	2.0	—
Granitic Chamise Chaparral*	37210	177.0	—
Granitic Chamise Chaparral/Montane Buckwheat Scrub*	37210/37K00	2.2	—
Granitic Northern Mixed Chaparral*	37131	68.2	113.2
Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub*	37131/37K00	13.3	—
Red Shank Chaparral *	37300	68.5	38.6
Scrub Oak Chaparral*	37900	6.0	3.7
	Subtotal	*396.7*	*174.6*
Riparian			
Southern Willow Scrub*	63320	—	0.5
Wet Montane Meadow*	45110	—	0.07
	Subtotal	—	*0.6*
Woodland			
Coast Live Oak Woodland*	71160	0.9	6.6
Disturbed Coast Live Oak Woodland*	71160	—	3.8
	Subtotal	*0.9*	*10.4*
Non-Native Communities and Land Covers			
Non-Native Grassland*	42200	—	7.7
Open Water	64100	0.1	—

Table 1-2
Vegetation Communities and Land Cover Types

Habitat Types/Vegetation Communities	Code[1]	TDS Existing Acreage	Gen-tie Existing Acreage
Disturbed Land	11300	21.9	11.7
Urban/Developed	12000	—	4.8
	Subtotal	*22.0*	*24.2*
Total	**--**	**419.5**	**209.8**

[1] Holland (1986) as modified by Oberbauer et al. (2008)
* Considered special-status by the County (2010a).

1.4.2.1 Big Sagebrush Scrub (35210)

Big sagebrush scrub is characterized as being a moderately open shrubland consisting predominantly (greater than 50% absolute cover) of big sagebrush (*Artemisia tridentata* ssp. *tridentata*). It often occurs in or adjacent to the floodplain in the sandy transition to chaparral.

The areas mapped as big sagebrush scrub within the solar site are strongly dominated by big sagebrush. This community occurs in the northeastern portion of the site and in the 100-foot survey area buffer of the gen-tie alignment (Figure 4A). Within the solar farm site, there are 16.2 acres and within the gen-tie alignment, there are 0.9 acres of big sagebrush scrub mapped in the northeastern region of the alignment.

The *Artemisia tridentata* alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Big sagebrush scrub is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.2 Montane Buckwheat Scrub (32K00)

Montane buckwheat scrub is not described by Holland (1986), but is included in Oberbauer et al. (2008). This community often forms a nearly monotypic stand found at higher elevations in San Diego County (Oberbauer et al. 2008).

On site, areas mapped as montane buckwheat scrub are dominated by Eastern Mojave buckwheat (*Eriogonum fasciculatum* var. *polifolium*), but also include species such as chamise and deerweed (*Acmispon glaber*). The herb layer includes species such as threadleaf snakeweed, mustard, and wild oat (*Avena* spp.). This community occurs in patches throughout the site (Figures 4A, 4B, 4C and 4D). There are 2.3 acres of disturbed montane buckwheat scrub in the northwestern and southeastern portion of the solar farm site that have been graded in the past; currently vegetation is at low cover and regrowing (Figure 4A). Within the solar farm site, there are 41.0 acres and within the gen-tie alignment, there are 18.2 acres scattered throughout the alignment that are mapped as montane buckwheat scrub.

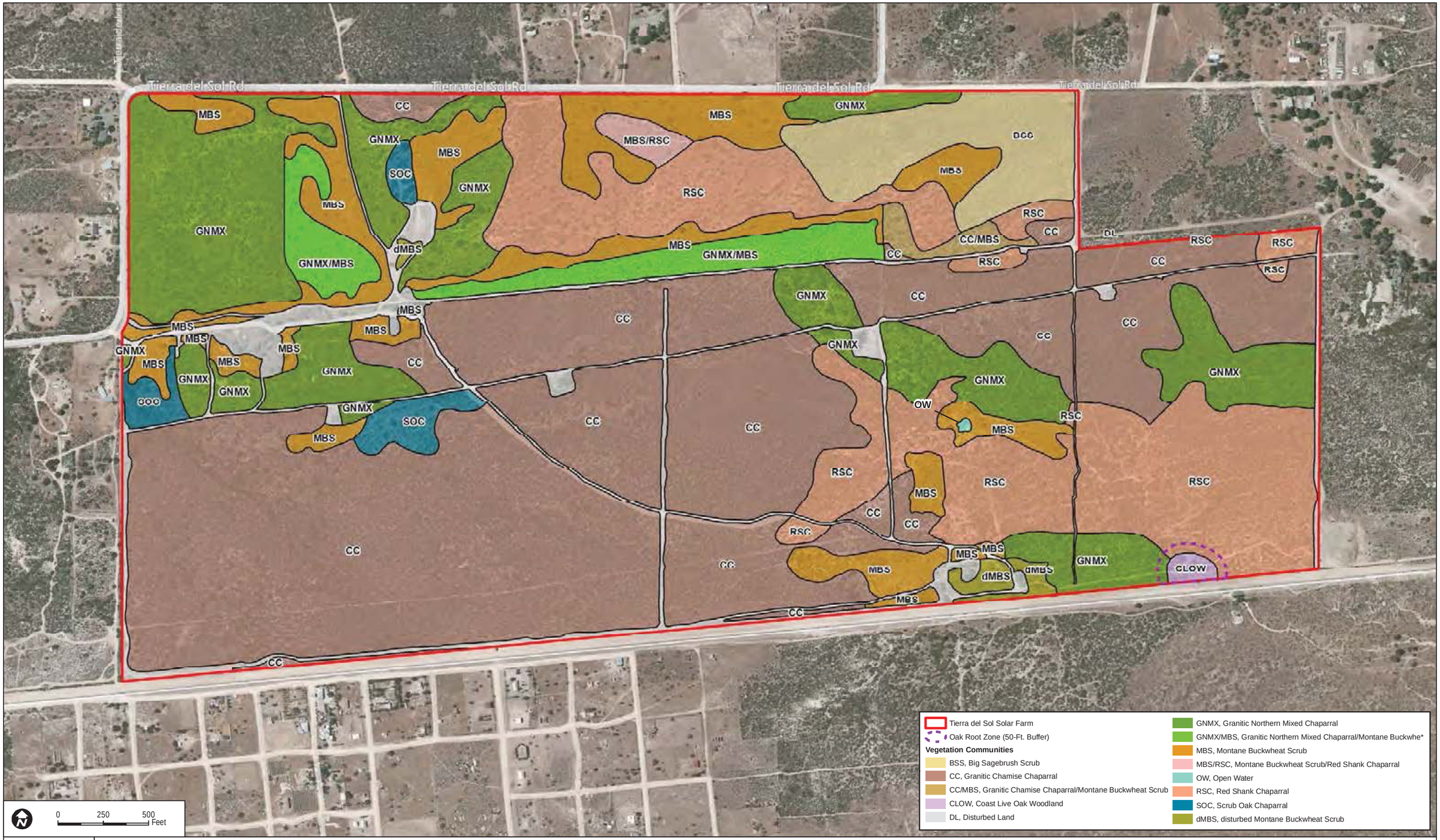
The *Eriogonum fasiculatum* alliance has a rank of G5S5 in CDFG (2010) meaning it is globally secure and secure in the state. Montane buckwheat scrub is not included in the Habitat Mitigation Ratios in the County Significance Guidelines (Table 5, County of San Diego 2010b); however, it was originally classified together with flat-topped buckwheat scrub, which is considered special-status based on mitigation recommendations of the County (2010b).

In 1993, CDFG and California Resources Agency (CRA) published the Southern California Coastal Sage Scrub Natural Community Conservation Plan (NCCP) Conservation Guidelines (Conservation Guidelines) (CDFG and CRA 1993a) and the Southern California Coastal Sage Scrub NCCP Process Guidelines (Process Guidelines) (CDFG and CRA 1993b). The Conservation Guidelines provide guidance to determine the habitat value of the coastal sage scrub, and the Process Guidelines explain the roles of local, state, and federal agencies and how the NCCP planning process will shift focus from the regional level to the subregional level. The County Significance Guidelines (County of San Diego 2010b) state that mitigation ratios for flat-topped buckwheat are subject to the Process Guidelines based on the habitat value defined in the Conservation Guidelines (Lower, Moderate, or High). However, the Subregional Coastal Sage Scrub NCCP Planning Unit Focus Map (CDFG and CRA 1993a) does not extend as far east as the project area (Figure 1). In addition, the montane buckwheat scrub on site does not support California sagebrush (*Artemisia californica*), is outside of the range of coastal California gnatcatcher (*Polioptila californica californica*), and does not provide habitat for a particular special-status species in the project area. Therefore, the montane buckwheat scrub is considered to have a lower value.

1.4.2.3 Montane Buckwheat Scrub/Red Shank Chaparral (37K00/37300)

Montane buckwheat scrub/red shank chaparral is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by flat-topped buckwheat and red shank (*Adenostoma sparsifolium*). On site, areas mapped as montane buckwheat scrub/red shank chaparral are dominated by Eastern Mojave buckwheat and red shank, but also include species such as chamise, deerweed, and chaparral yucca (*Hesperoyucca whipplei*). The herb layer sparse and includes species such as threadleaf snakeweed and mustard. This community occurs in one patch within the north central portion of the solar farm site (Figure 4A). Within the solar farm site, there are 2.0 acres. This vegetation community does not occur within the gen-tie alignment.

The *Eriogonum fasiculatum/Adenostoma sparsifolium* association is not recognized by CDFG (2010). However, montane buckwheat scrub and red shank chaparral are considered special-status based on mitigation recommendations of the County (2010a).



DUDEK

7123

SOURCE: Bing Maps

FIGURE 4A

Biological Resources - Tierra del Sol Solar Farm Vegetation Communities

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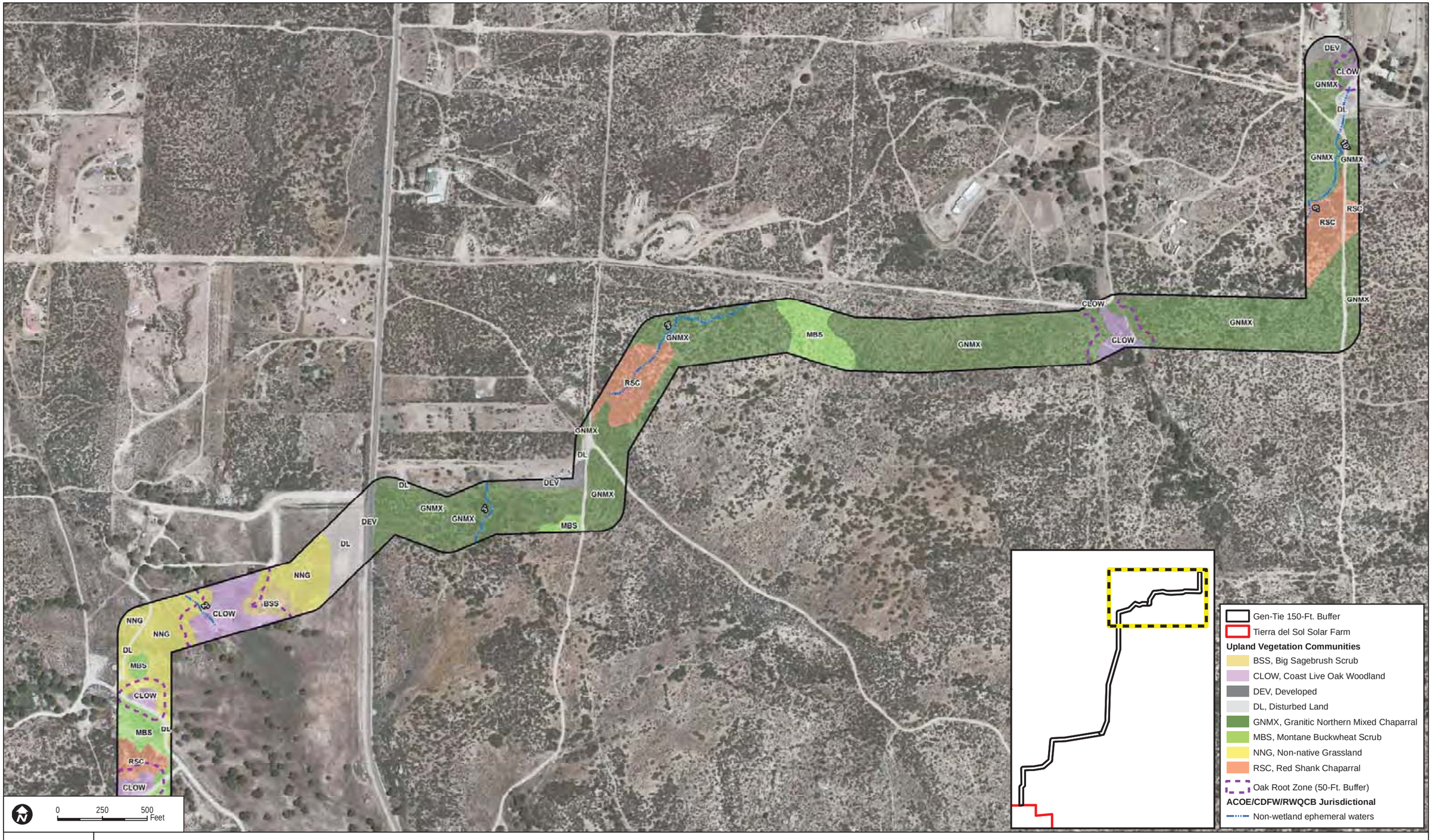

DUDEK

7123

SOURCE: SANDAG; Bing Maps

FIGURE 4B

Biological Resources - Tierra del Sol Gen-Tie Vegetation Communities

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Gen-Tie 150-Ft. Buffer
Tierra del Sol Solar Farm

Upland Vegetation Communities

- BSS, Big Sagebrush Scrub
- CLOW, Coast Live Oak Woodland
- DEV, Developed
- DL, Disturbed Land
- GNMX, Granitic Northern Mixed Chaparral
- MBS, Montane Buckwheat Scrub
- NNG, Non-native Grassland
- RSC, Red Shank Chaparral
- SOC, Scrub Oak Chaparral
- dCLOW, disturbed Coast Live Oak Woodland
- WMM, Wet Montane Meadow
- SWS, Southern Willow Scrub
- Oak Root Zone (50-Ft. Buffer)

ACOE/CDFW/RWQCB Jurisdictional

- Non-wetland ephemeral waters

Jurisdictional Wetlands

- ACOE/CDFW/RWQCB
- CDFW/County
- RPO 50-Ft. Buffer
- Data Stations

Jewel Valley Rd

DS-1 DS-2 DS-3 DS-4 DS-5 DS-6 DS-7

bing

0 375 750 Feet

DUDEK

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SOURCE: SANDAG; Bing Maps

FIGURE 4C

Biological Resources - Tierra del Sol Gen-Tie Vegetation Communities

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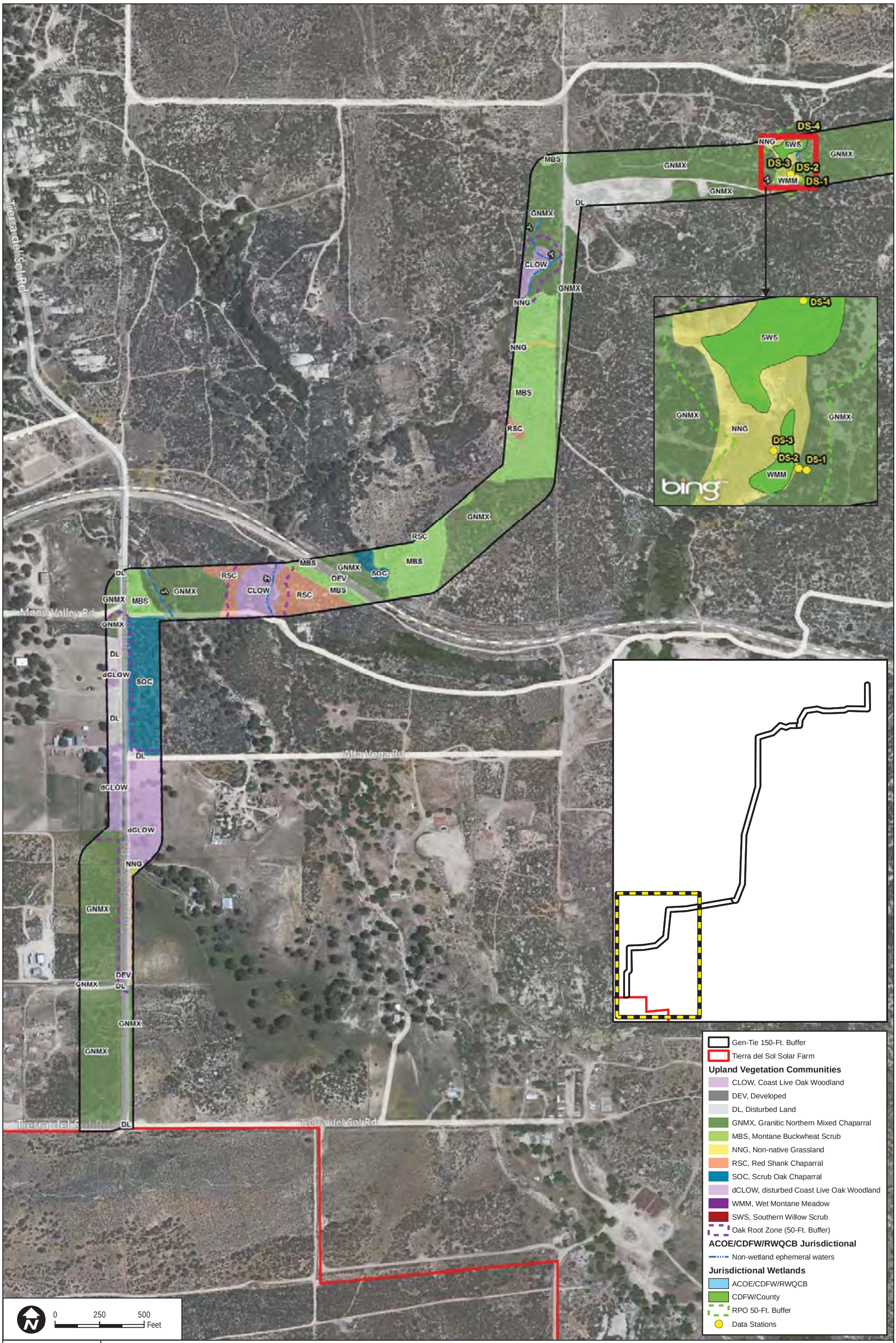

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SOURCE: SANDAG; Bing Maps

FIGURE 4D

Biological Resources - Tierra del Sol Gen-Tie Vegetation Communities

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1.4.2.4 Granitic Chamise Chaparral (37210)

Granitic chamise chaparral contains shrubs, overwhelmingly dominated by chamise, from 3 to 10 feet tall with little cover provided by other species. Stump sprouting allows this vegetation to adapt to repeated fires. Chamise chaparral typically occurs on dry slopes and ridges (Holland 1986).

The granitic chamise chaparral on site consists predominantly of chamise, but also includes California buckwheat, threadleaf snakeweed, California jointfir (*Ephedra californica*), hairy yerba santa (*Eriodictyon trichocalyx*), sugar sumac, deerweed, and narrowleaf goldenbush (*Ericameria linearifolia*). Chamise chaparral occurs throughout much of the solar farm site (Figure 4A). The solar farm site is dominated by this vegetation community with 177.0 acres mapped throughout the site. This vegetation community was not mapped within the gen-tie alignment. The *Adenostoma fasciculatum* (chamise) alliance has a rank of G5S5 in CDFG (2010), meaning it is globally secure and secure in the state. Granitic chamise chaparral is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.5 Granitic Chamise Chaparral/Montane Buckwheat Scrub (37210/37K00)

Granitic chamise chaparral/montane buckwheat scrub is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by chamise and flat-topped buckwheat. The granitic chamise chaparral/montane buckwheat scrub on site consists predominantly of chamise and flat-topped buckwheat, but also includes California jointfir, hairy yerba santa, sugar sumac, and deerweed. Granitic chamise chaparral/flat-topped buckwheat occurs in one patch in the northeastern portion of the solar farm site (Figure 4A). Within the solar farm site, there are 2.2 acres mapped within the northeastern area of the site.

The *Adenostoma fasciculatum/Eriogonium fasiculatum* association is not ranked in CDFG (2010); however, is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.6 Granitic Northern Mixed Chaparral (37131)

Granitic northern mixed chaparral consists of broad-leaved sclerophyll shrubs that range from 2 to 4 meters (7 to 13 feet) in height and that form dense stands dominated by scrub oak (*Quercus sp.*), chamise, manzanita (*Arctostaphylos* spp.), and ceanothus (*Ceanothus* spp.). This community occurs inland of southern mixed chaparral in San Diego County and is indicated by desert ceanothus (*Ceanothus greggii*) and other codominants (chamise, scrub oak (*Quercus berberidifolia*), and other oak hybrids). Granitic northern mixed chaparral is underlain by granitic soils.

On site, granitic northern mixed chaparral includes chamise, interior live oak (*Quercus wislizeni*), redshank, California buckwheat, and deerweed. Some additional associated species include sugar sumac (*Rhus ovata*), threadleaf snakeweed, Davidson's buckwheat (*Eriogonum davidsonii*), among others. Granitic northern mixed chaparral is common in the west and northwestern portions of the solar farm site and also occurs along the gen-tie alignment (Figures 4A and 4B). There are rock outcrops within this community along the gen-tie alignment. There are 2.0 acres of northern mixed chaparral in the northwestern portion of the solar farm site that have been graded in the past; currently vegetation is at low cover and regrowing. Overall there are 68.2 acres of this vegetation community within the solar farm site. Within the gen-tie alignment this is the dominate vegetation community and consists of 113.2 acres.

Granitic northern mixed chaparral has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Granitic northern mixed chaparral is not considered special-status by CDFG, but it is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.7 Granitic Northern Mixed Chaparral/Montane Buckwheat Scrub (37131/37K00)

Granitic northern mixed chaparral/montane buckwheat scrub is not described by Holland (1986) or Oberbauer et al. (2008). This community is co-dominated by broad-leaved sclerophyll shrubs such as Nuttall's scrub oak, chamise, manzanita, ceanothus, and flat-topped buckwheat.

On site, granitic northern mixed chaparral/montane buckwheat scrub includes chamise, interior live oak, redshank, California buckwheat, and deerweed. There are 13.3 acres of granitic northern mixed chaparral/montane buckwheat scrub in the northern portion of the solar farm site (Figure 4A). This vegetation community is not mapped within the gen-tie alignment.

This association is not recognized by CDFG (2010); however, granitic northern mixed chaparral/montane buckwheat scrub are considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.8 Red Shank Chaparral (37300)

Red shank chaparral is composed of nearly pure stands of red shank (Holland 1986). It is similar to chamise chaparral but is typically taller and somewhat more open (Holland 1986).

In red shank chaparral communities on site, red shank is dominant or codominant with chamise. Other shrub species include Eastern Mojave buckwheat, California cholla (*Cylindropuntia californica*), and chaparral yucca (*Hesperoyucca whipplei*). Like chamise chaparral, the herb layer

in red shank chaparral is sparse and includes species such as threadleaf snakeweed and mustard. Within the solar farm site, there are 68.5 acres and within the gen-tie alignment, there are 38.6 acres. Red shank chaparral occurs in various locations throughout the solar farm site and gen-tie alignment (Figures 4A and 4B).

The *Adenostoma sparsifolium* (red shank) alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Red shank chaparral is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.9 Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense evergreen chaparral that can reach 20 feet tall and is dominated by scrub oak and is found on north-facing or otherwise mesic slopes (Holland 1986).

On site, scrub oak chaparral is dominant by scrub oak (*Quercus berbidifolia)*. Other shrub species present include chamise, California cholla and chaparral yucca. Scrub oak chaparral occurs in three patches, totaling 6.0 acres, within the northwestern portion of the solar farm site and one patch (3.7 acres) on the gen-tie alignment (Figure 4A and 4B).

The *Quercus berbidifolia* (scrub oak) alliance has a rank of G4S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state. Scrub oak chaparral is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.10 Southern Willow Scrub (63320)

According to Holland (1986), southern willow scrub has been described as a dense, broad-leafed, winter-deciduous riparian thicket dominated by several species of willow (*Salix* spp.), with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. This habitat is considered seral due to repeated disturbance/flooding and is therefore unable to develop into the taller southern cottonwood willow riparian forest.

There are two areas (0.5 acres) within the gen-tie alignment mapped as southern willow scrub (Figure 4C). This vegetation community is not mapped within the solar farm site. These areas are generally dominated by red willow (*Salix laevigata*), with sparse herbaceous layer that includes Mexican juncus (*Juncus mexicanus*), clustered field sedge (*Carex praegracilis*), and henbit dead-nettle (*Lamium amplexicaule*). Southern willow scrub has a rank of G3S2.1 in CDFG (2010), meaning it is considered vulnerable to extirpation or extinction globally and imperiled in the state; and is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.11 Wet Montane Meadow (45110)

Wet montane meadow is dominated by dense growth of sedges and other perennial herbs, and is characterized by soils that are saturated throughout the year (Holland 1986). Vegetation generally is about 0.5-1 meters in height, although some herbs will reach 2 meters (Holland 1986). The herbaceous layer contains sedges (*Carex* sp.), juncus (*Juncus* sp.), scirpus (e.g., *Scirpus cringer*), and slender rush grass (*Muhlenbergia filiformis*).

This vegetation community does not occur on the solar farm site. In the gen-tie alignment, the wet montane meadow is dominated by Mexican juncus, western ragweed (*Ambrosia psilostachya*), and India sweetclover (*Melilotus indicus*). Wet montane meadow occurs in one area in the southwestern region of the gen-tie alignment (Figure 4C). Wet montane meadow comprises approximately 0.07 acres. This vegetation community has a rank of G3S3.2 (CDFG 2010), meaning it is considered vulnerable to extirpation or extinction globally and in the state; and is considered special-status (CDFG 2010) and therefore requires mitigation.

1.4.2.12 Coast Live Oak Woodland (71160)

Coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia*) with a canopy height reaching 10 to 25 meters (Holland 1986). The shrub layer is poorly developed, but may include toyon (*Heteromeles arbutifolia*), gooseberry (*Ribes* spp.), or laurel sumac (*Malosma laurina*). The herb component is continuous, dominated by a variety of introduced species (Holland 1986).

In the project area, coast live oak woodland is dominated by coast live oak. Other shrub species include chamise, California buckwheat, and California cholla and chaparral yucca. Coast live oak woodland occurs in one patch within the southeastern portion of the solar farm site (0.9 acres). There are 6.6 acres scattered in several locations along the gen-tie alignment. Additionally, approximately 4.7 acres of the coast live oak woodland along the gen-tie alignment is located adjacent to a private residence and vegetation under the oaks has been cleared, and therefore, is considered disturbed (Figures 4A and 4B). The *Quercus agrifolia* alliance has a rank of G5S4 in CDFG (2010), meaning it is considered apparently secure globally and in the state and is considered special-status based on mitigation recommendations of the County (2010a).

1.4.2.13 Non-Native Grassland (42200)

According to Holland (1986), non-native grasslands include a dense to sparse cover of annual grasses that die during the summer months, persisting as seeds. Non-native grassland only occurs along the gen-tie alignment and consists of 7.7 acres scattered throughout the site (Figure 4B).

Non-native grassland has a rank of G4S4 in CDFG (2010), meaning it is apparently secure globally and in the state. Because non-native grassland can provide habitat for a variety of species, the County requires mitigation for impacts to it; therefore, it is considered special-status by the County (2010a).

1.4.2.14 Open Water (64140) (Non-Jurisdictional)

Open water is not recognized by Holland (1986), but is described in Oberbauer et al. (2008). Open water consists of bodies of fresh water (extremely low salinity) in the form of lakes, streams, ponds, or rivers (Oberbauer et al. 2008). Open water areas are aquatic areas that generally lack emergent vegetation, but typically support hydrophytic vegetation around their margins (e.g., mulefat scrub, southern willow scrub, freshwater marsh, or herbaceous wetland).

The open water area occurs in the central-eastern portion of the solar farm site and is a stock pond formed by a manufactured bank along the east side of the area (Figure 4A). The lowest portion of the depressional feature is characterized by cracked soils, mostly lacking any vegetation. A surrounding ring of herbaceous vegetation is dominated by rabbit's foot grass (*Polypogon monspeliensis*) and black mustard (*Brassica nigra*).

The jurisdictional status of this land cover is discussed in Section 1.4.7.

1.4.2.15 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 sensitive wildlife, including potential raptor foraging. Disturbed land on site consists primarily of unpaved roads on the site as well as exotic tress that were intentionally planted around historical development pads (i.e., Tecate cypress and pine (Pinus sp.) (Figures 4A and 4B). These roads and historical development pads/wind row areas have been graded and contain little native vegetation. However, most of the access roads are not maintained regularly and support immature to mature shrubs and herbs, including Eastern Mojave buckwheat, threadleaf snakeweed (*Gutierrezia sarothrae*), chamise (*Adenostoma fasciculatum*), and shortpod mustard (*Hirschfeldia incana*), at low cover (<10%). Within the solar farm site, there are 21.9 acres and within the gen-tie alignment, there are 11.7 acres.

Disturbed habitat is not considered special-status by CDFG or the County (2010a).

1.4.2.16 Urban/Developed (12000)

Urban/developed land refers to areas that have been constructed upon or disturbed so severely that native vegetation is no longer supported. Developed land includes areas with permanent or semi-permanent structures, pavement or hardscape, landscaped areas, and areas with a large amount of debris or other materials (Oberbauer et al. 2008). Urban/developed areas in the gen-tie alignment are associated with a private residences and total 4.8 acres (Figure 4B). There are no areas mapped as urban/developed within the solar site.

Urban/developed areas are not considered special-status by CDFW or the County (2010a).

1.4.3 Flora

A total of 150 vascular plant species, consisting of 129 native species (86 %), and 21 non-native species (14%), were recorded on site during initial surveys (Appendix A).

1.4.4 Fauna

The project area supports habitat for common upland and riparian 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 within the project area 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, and rare plant surveys is provided in Appendix B. There were 81 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 and wetland habitat types. Special-status wildlife species are addressed in Section 1.4.6.

1.4.4.1 Reptiles and Amphibians

Seven reptile species were observed within and adjacent to the project area during surveys: southern alligator lizard (*Elgaria multicarinata*), Blainville's (coast) horned lizard (*Phrynosoma blainvillii*), western fence lizard (*Sceloporus occidentalis*), granite spiny lizard (*Sceloporus orcutti*), side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis melanoleucus*), and western diamondback rattlesnake (*Crotalus atrox*). Two amphibian species were documented

within the project area during 2011/2012 surveys: Baja California treefrog (*Pseudacris hypochondriaca hypochondriaca*) and Northern Pacific treefrog (*Pseudacris regilla*).

1.4.4.2 Birds

Forty-one bird species were detected during the biological surveys. Common species observed within the project area include red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), acorn woodpecker (*Melanerpes formicivorus*), northern flicker (*Colaptes auratus*), Say's phoebe (*Sayornis saya*), Cassin's kingbird (*Tyrannus vociferans*), common raven (*Corvus corax*), western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), blue-gray gnatcatcher (*Polioptila caerulea*), western bluebird (*Sialia mexicana*), wrentit (*Chamaea fasciata*), northern mockingbird (*Mimus polyglottos*), yellow-rumped warbler (*Setophaga coronata*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculates*), white-crowned sparrow (*Zonotrichia leucophrys*), and house finch (*Carpodacus mexicanus*).

1.4.4.3 Mammals

Ten mammal species were detected (directly or indirectly) within and adjacent to the project area during biological surveys, including desert cottontail (*Sylvilagus audubonii*), San Diego black-tailed jackrabbit (*Lepus californica bennettii*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), Botta's pocket gopher (*Thomomys bottae*), woodrat species (*Neotoma* sp.), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus fuliginata*).

Bats occur throughout most of Southern California and may use any portion of the project area as foraging habitat. However, there is a low potential for bat species to roost within the small rock outcroppings or few trees within the project area. Because the majority of the surveys were conducted during daylight hours and, due to low potential, did not include focused efforts to locate roosting bats, no bats were detected within the project area.

1.4.4.4 Invertebrates

Twenty-one invertebrate species were observed on the project site. The most abundant butterflies found in the project area during 2012 Quino checkerspot butterfly surveys were perplexing (green) hairstreak (*Callophrys perplexa*), Sara's orangetip (*Anthocharis sara*), common white (*Pontia protodice*), Acmon blue (*Icaria acmon*), and Behr's metalmark (*Apodemia mormo*).

1.4.4.5 Fish

No fish species were documented in the project area during 2011/2012 surveys. While an open water/herbaceous vegetation community exists within the project area, these features do not support perennial water sources or native fish populations. There is one basin mapped as open water in the project area that does not support fish populations.

1.4.5 Sensitive 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 2013c; CNPS 2013), and (3) plant species considered "sensitive" by the County of San Diego (Table 2, County of San Diego 2010a).

Special-status plant surveys were conducted on the solar farm and gen-tie alignment sites to determine the presence or absence of plant species that are considered endangered, rare, or threatened under CEQA Guideline 15380 (14 CCR 15000 et seq.), as described in Section 1.3.4.1. Six special-status plant species were detected within the solar farm site during the course of the fall 2011 and spring/summer 2012 surveys (Appendix C). Four special-status plant species were detected within the gen-tie alignment site during spring, summer, and fall 2013 surveys (Appendix C). 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). Special-status plant species known to occur in the surrounding region and their potential to occur on both the Tierra Del Sol and the gen-tie alignment sites are presented in Appendices C and D. These lists include the potentially occurring sensitive plant species provided by the County's pre-application meeting letter (County of San Diego 2012, Draft East County Plan – Species List (County of San Diego 2009, plant species recorded in U24, T24, T25, T26 and U26 grids of the San Diego Plant Atlas, including and surrounding the project site (U25) (SDNHM 2012a), and plant species recorded in the Tierra Del Sol and Live Oak Springs quadrangles and the surrounding six quadrangles (CDFG 2012a and CDFW 2013a; USFWS 2012 and 2013; CNPS 2012 and 2013,). Plant species sensitivity is based on their CRPR (CDFW 2013b-c). The evaluation of each species' potential to occur on site is based on the elevation, habitat, and soils present on site and Dudek's knowledge of biological resources in the area and regional distribution of each 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 2012 and 2013, Figure 5A).

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 observed in the project area, or have high potential to occur, are described as follows and included in Appendix C.

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

Jacumba milk-vetch is a CRPR 1B.2 (CNPS 2013) and County List A species (County of San Diego 2010a). This perennial herb in the pea or bean family (*Fabaceae*) blooms from April through June. It occurs in chaparral, cismontane woodland, pinyon and juniper woodland, riparian scrub, valley and foothill grassland, and rocky communities at elevations of 900 to 1,370 meters (2,953 to 4,495 feet) (CNPS 2013). On the Tierra del Sol site there are approximately 315 individuals of Jacumba milk-vetch within the solar farm project area (Figure 5B). Most occurrences were documented in the northeastern and southeastern portions of the project area within open areas of big sagebrush scrub and red shank chaparral. Between 250-1,520 individuals of Jacumba milk-vetch were mapped along the gen-tie alignment in 2013. Most of the gen-tie mapped occurrences were in the northeastern and southwestern region of the alignment in granitic northern mixed chaparral, red shank chaparral, scrub oak chaparral, and coast live oak woodland (Figures 5B-E).

Tecate Tarplant (*Deinandra floribunda*)

Tecate tarplant is a CRPR 1B.2 (CNPS 2013) and a County List A species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this species blooms from August through October in chaparral and coastal scrub habitats. Tecate tarplant is an annual herb that occurs at elevations of 70 to 1,220 meters (230 to 4,003 feet) (CNPS 2013).

Within the solar farm site there are approximately 3,103 individuals of Tecate tarplant, associated with drainages in the southeastern portion of the solar farm site (Figure 5B). Within the gen-tie alignment there are 637-1,775 individuals of this species (Figure 5C-E). Tecate tarplant within the solar farm site is located within three drainages associated riparian habitat.

Tecate Cypress (*Hesperocyparis forbesii*)

Tecate cypress is a CRPR 1B.1 (CNPS 2013) and a County List A species (County of San Diego 2010a). A member of the cypress (*Cupressaceae*) family, this evergreen tree occurs in closed-cone conifer forests, chaparral, and riparian forest habitats, and it occurs at elevations between 80 and 1,500 meters (836 and 4,921 feet) (CNPS 2013).There are 4 individuals of Tecate cypress in the western portion of the solar farm site and 15 individuals along the southern boundary of the solar farm site (Figure 5B). The Tecate cypress on site are of a single age class, appear to have been planted, and do not appear to naturally occur in the area. The nearest CNDDB location, recorded in 1981, is approximately 8.5 miles west of the Project Area. This species was not observed within the gen-tie alignment site. The species is not known to naturally occur in the area.

Sticky Geraea (*Geraea viscida*)

Sticky geraea is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the sunflower (*Asteraceae*) family, this perennial herb blooms from May through June in chaparral habitats and occurs at elevations between 450 and 1,700 meters (1,476 to and 5,557 feet) (CNPS 2013).There is a CNDDB record that overlaps the project site. On the solar farm site there are approximately 274 individuals of sticky geraea within the project area (Figure 5A). Most occurrences were documented in the northeastern and southeastern portion of the project area within areas of chamise chaparral and red shank chaparral (Figure 5B). Approximately 50-240 occurrences of sticky geraea were documented on the gen-tie alignment. These occurrences of sticky geraea were mapped in the northeastern section of the alignment (Figures 5B and 5C).

Desert Beauty (*Linanthus bellus*)

Desert beauty is a CRPR 2.3 (CNPS 2013) and a County List B species (County of San Diego 2010a). A member of the phlox (*Polemoniaceae*) family, this annual herb blooms from April through May in chaparral habitats. This species typically occurs at elevations of 1,000 to 1,400 meters (3,281 to 5,493 feet) (CNPS 20132).On the solar farm site there are approximately 727 individuals of desert beauty within the project area (Figure 5B). Most occurrences were documented in the southeastern portion of the project area within open areas of bare rock within red shank chaparral. Few occurrences were documented within granitic chamise chaparral and granitic northern mixed chaparral. On the gen-tie alignment site, approximately 660-3,210 individuals of desert beauty were mapped within red shank chaparral and granitic northern mixed chaparral primarily within the northeastern region of the site.

DUDEK

7123

SOURCE: USFWS 2012; Bing Maps

FIGURE 5A

Biological Resources - USFWS Critical Habitats

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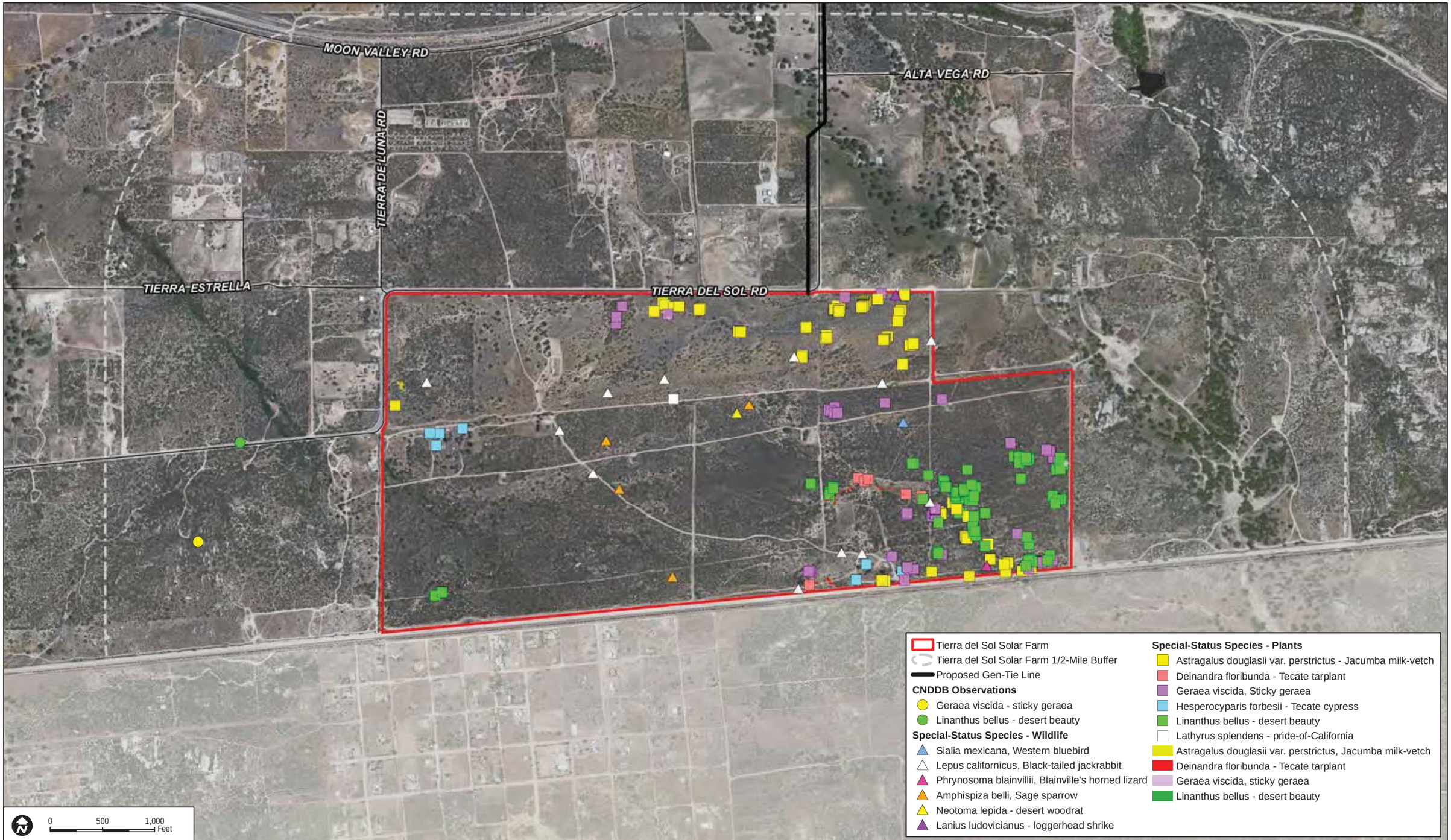

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SOURCE: CNDDB 2012; Bing Maps

FIGURE 5B

Biological Resources - Special-Status Species Observations

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SOURCE: SANDAG; Bing Maps

FIGURE 5C

Biological Resources - Tierra del Sol Gen-Tie Special-Status Plant Observations

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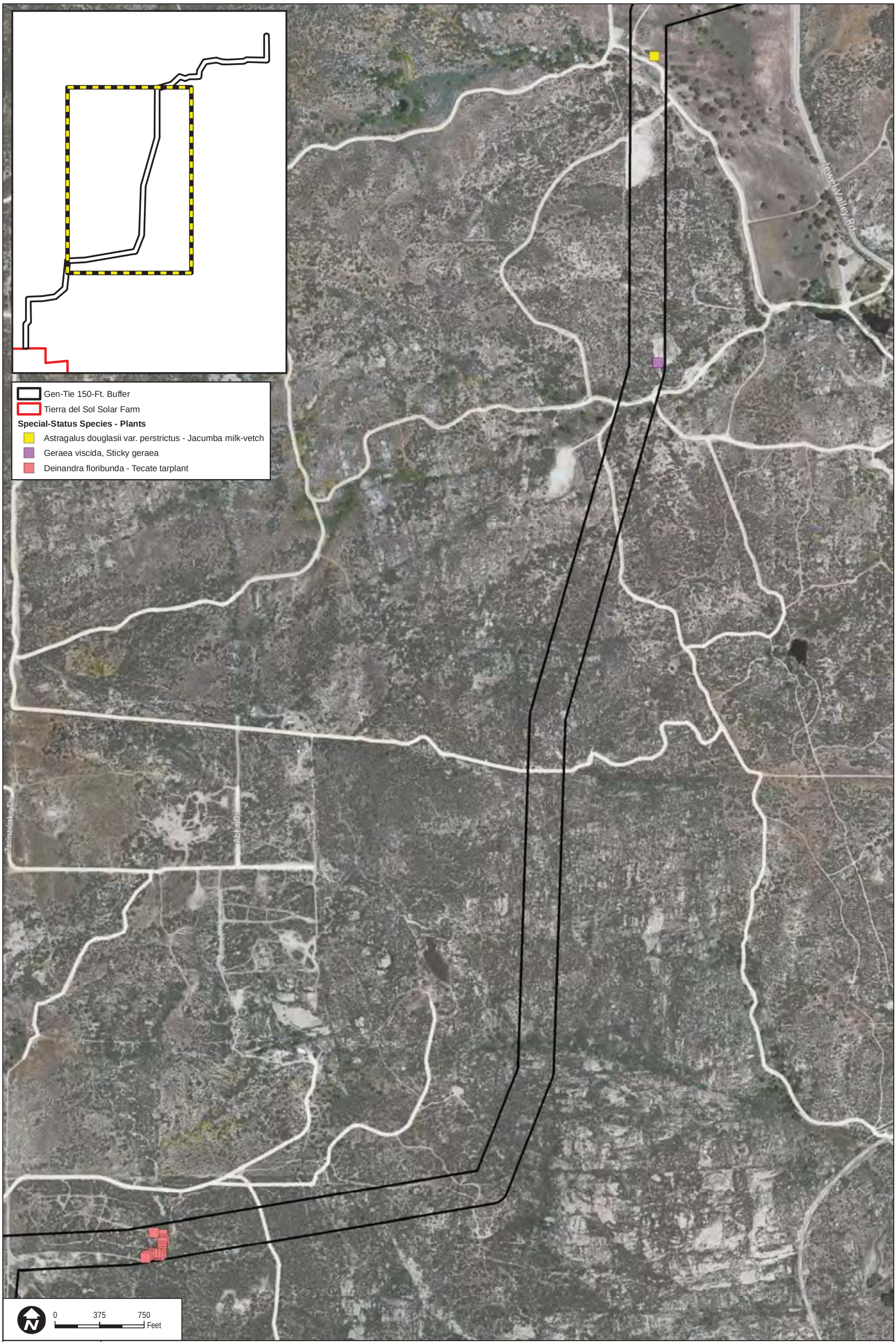

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SOURCE: SANDAG; Bing Maps

FIGURE 5D

Biological Resources - Tierra del Sol Gen-Tie Special-Status Plant Observations

DRAFT BIOLOGICAL RESOURCES REPORT - TIERRA DEL SOL SOLAR FARM

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Gen-Tie 150-Ft. Buffer
Tierra del Sol Solar Farm
Special-Status Species - Plants
Astragalus douglasii var. perstrictus - Jacumba milk-vetch
Linanthus bellus - desert beauty
Deinandra floribunda - Tecate tarplant

Alta Vega Rd
Tierra del Sol Rd

0 250 500 Feet

DUDEK

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SOURCE: SANDAG; Bing Maps

FIGURE 5E

Biological Resources - Tierra del Sol Gen-Tie Special-Status Plant Observations

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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 observed on the solar far site, or have high potential to occur at the gen-tie alignment site, are described as follows and included in Appendix C.

Pride of California (*Lathyrus splendens*)

Pride of California is a CRPR 4.3 (CNPS 2013) and a County List D species (County of San Diego 2010a). A member of the *Fabaceae* family, this perennial herb blooms from March to June at elevations between 200 and 1,525 meters (656 and 5,003 feet) (CNPS 20132).

During the spring 2012 surveys, one occurrence of Pride of California with approximately four individuals was documented within the central portion of the solar farm site within granitic chamise chaparral (Figure 5A). This species was not observed within the gen-tie alignment site. Although there is suitable habitat present, focused surveys for this species were negative within the gen-tie alignment.

San Bernardino aster (*Symphyotrichum defoliatum*)

San Bernardino aster is a CRPR 1B.2 (CNPS 2013) and is not included on the *County of San Diego Sensitive Plant List* (County of San Diego 2010a). A member of the *Asteraceae* family, this perennial rhizomatous herb blooms from July to November at elevations between 2 and 2,040 meters (7 and 6,693 feet) (CNPS 2013). Historical CNDDB records from 1937 and 1938 overlap the project site.

This species is absent from both the solar farm site and the gen-tie alignment. Although there is suitable habitat present, focused surveys for this species were negative within the project areas.

1.4.6 Sensitive 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 the CDFG (2011); (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 the USFWS (2008); and (5) wildlife species considered "sensitive" by the County of San Diego (Table 3, County of San Diego 2010a).

Seven special-status wildlife species were detected within the project area: Blainville's horned lizard, turkey vulture, Cooper's hawk, Bell's sage sparrow, western bluebird, San Diego black-tailed jackrabbit , and southern mule deer These species are described as follows in further detail and depicted on Figure 5A. A raptor survey and habitat assessment was conducted for the solar farm site in winter 2011/2012. Special-status wildlife species known to occur in the surrounding region and their potential to occur on site are presented in Appendix D. This list includes the potentially occurring special-status wildlife species provided by the County's pre-application meeting letter (County of San Diego 2012), Draft East County Plan – Species List (County of San Diego 2009), wildlife species recorded in the Tierra Del Sol and Live Oak Springs quadrangles, and incorporating the surrounding six quadrangles (CDFG 2012a, CDFW 2013a; USFWS 2012 and 2013). 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

There is no USFWS-designated critical habitat within the project area, but there is critical habitat for two special-status wildlife species within 5 miles of the project area: Peninsular bighorn sheep (*Ovis canadensis nelsoni*) and Quino checkerspot butterfly (Figure 5A). The project area does not contain constituent elements required for Peninsular bighorn sheep and therefore it is considered unoccupied. The project site was surveyed for Quino checkerspot and the results indicate it is unoccupied.

1.4.6.2 County Group I Species

County Group 1 species that have been observed in the project area, or have high potential to occur, are described below and included in Appendix E. In addition, all federally or state-listed species identified in the County's Pre-Application Summary Letter (County of San Diego 2012) are discussed as follows.

Birds

Cooper's Hawk (*Accipiter cooperi*) - CDFW WL/County Group 1

Cooper's hawk is a CDFW 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).

There are CNDDB records for this species within the project area and this species was observed within the solar farm site within chaparral habitat.

Within the Proposed Project area, there are no permanent water sources. However, the Proposed Project area may support limited nesting opportunities within disturbed land, red shank chaparral and coast live oak woodland. Suitable foraging habitat includes granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, scrub oak chaparral, coast live oak woodland, and red shank chaparral.

Bell's Sage Sparrow (*Amphispiza belli belli*) - CDFW WL/County Group 1

Bell's sage sparrow is a USFWS BCC, CDFW 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 2008). The range of Bell's sage sparrow overlaps with that of at least one other subspecies of sage sparrow (County of Riverside 2008).

The sage sparrow occupies semi-open habitats with evenly spaced shrubs that are 3.3 to 6.6 feet high (County of Riverside 2008). 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 sage 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.

The Bell's sage sparrow was observed on multiple occasions throughout the project area (Figure 5A). There are no CNDDB records within 6-quad quadrangle search; however, there are confirmed breeding locations within the vicinity (Unitt 2004). Within the project study area, suitable habitat includes big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, montane buckwheat scrub/red shank chaparral, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, and disturbed land.

Golden Eagle (*Aquila chrysaetos*) - CDFW WL/State FP/County Group 1

Golden eagle is a USFWS BCC, CDFW WL, state FP, and County Group 1 species, and is protected under the federal Bald and Golden Eagle Protection Act. It is a yearlong, 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. There are no known nesting locations within 4,000 feet of the site within the United States. Within the project area, marginally suitable foraging habitat (approximately 122 acres) includes big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat, montane buckwheat/red shank chaparral, non-native grassland, and disturbed land. Typically,

the denser vegetation communities, such as chaparral habitat, are not suitable for foraging of golden eagle. The predominance of dense and tall chaparral vegetation makes the site less suitable as foraging habitat.

There is existing data for the region available from 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).

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[1], 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 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. The Canebrake location is approximately 10 miles north of the project area. The Moreno Butte location is approximately 10 miles southwest of the project. The Glenn Cliff/Buckman Springs location is approximately 9 miles west of the central portion of the project. The other active territories, located at Garnet Mountain, Monument Peak, and Thing Valley, are approximately 8, 7, and 7 miles west or northwest of the project area, respectively.

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

[1] 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).

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, about 14 miles north of the Tierra del Sol project area.

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.

A golden eagle report specific to the Proposed Project by WRI is included in Appendix H (2013). It describes the closest documented eagle territory as being extirpated with several other territories surrounding the project site as being active. This is supported with flight paths and GPS points of the golden eagles with satellite transmitters. The Tierra del Sol project site and the surrounding 4,000 foot buffer is located within the extirpated Boulevard territory. WRI has documented various golden eagle flight paths near Tierra del Sol between 2010 and 2012. Their results of the approximated territories show that they do not overlap the Proposed Project site. Additionally, none of the nests (active or otherwise) occurred within 4,000 feet of the Proposed Project.

There are no CNDDB records of this species within the project area or surrounding quadrangles.

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 (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, the 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 throughout the project area, 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., montane buckwheat scrub, big sagebrush scrub, granitic chamise chaparral, granitic southern mixed chaparral, red shank chaparral, disturbed habitat). There are no CNDDB records within the 6-quad quadrangle search; however, 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*) - CDFW WL/County Group 1

Prairie falcon is a USFWS BCC, CDFW 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 detected during surveys; however, there is suitable foraging habitat in the project area and it has moderate potential to forage in the area. Within the project area, suitable foraging habitat includes all vegetation communities and undeveloped land cover on site (i.e., coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, chamise chaparral, granitic northern mixed chaparral, red shank chaparral, and disturbed land). This species is not expected to nest within the project area. There are CNDDB records within the 6-quad quadrangle search; however, there are no recorded observations within the Tierra Del Sol or Live Oak Springs Quadrangles.

Loggerhead Shrike (*Lanius ludovicianus*) - CDFW SSC/County Group 1

Loggerhead shrike is a USFWS BCC, CDFW 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 man-made 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.

There are no CNDDB records for this species within the project area or surrounding 6-quad quadrangle search; however, one loggerhead shrike was documented within the northeastern portion of the solar farm site (Figure 5A). Within the project area, suitable habitat includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub (including disturbed), granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

Invertebrates

Quino Checkerspot Butterfly (*Euphydryas editha quino*) – Federally Endangered/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). Potential habitat within the survey area (i.e., all areas that are not excluded per the survey protocol, generally including sage scrub, open chaparral, grasslands, open or sparsely vegetated areas, rocky outcrops, trails and dirt roads) was surveyed.

All of the survey areas in the project area contained a variety of potential Quino checkerspot butterfly adult nectar plants. Protocol surveys were conducted in 2012 and 2013 (Dudek 2012, 2013a). The surveys were negative. There are no CNDDB records for this species within the project area or surrounding 6-quad quadrangle search. Based on the lack of records in the project area and the negative survey results, Quino checkerspot butterfly is not expected to occur in the project area.

1.4.6.3 County Group II Species

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

Reptiles

Belding's Orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) - CDFW 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 6-quad quadrangle 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, and this species has high potential to occur. Within the project area, suitable habitat includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

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

Coastal western 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).

The 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 western whiptail was not detected during surveys; however, there is suitable habitat in the project area, and it has high potential to occur. This species is recorded in CNDDB within the

Live Oak Springs quadrangle. Within the project area, suitable habitat includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

Rosy Boa (*Charina trivirgata*) – County Group 2

The rosy boa is a County Group 2 species. It occurs from Southern California and southwestern Arizona, south throughout Baja California, Mexico, and northwestern mainland Mexico, avoiding the lowest deserts, which are mainly in agricultural production or open dunes (Stebbins 2003; Yingling 1982; Zeiner et al. 1988). The rosy boa in California ranges from Los Angeles, eastern Kern, and southern Inyo Counties, and south through San Bernardino, Riverside, Orange, and San Diego Counties (Spiteri 1988; Stebbins 2003; Zeiner et al. 1988). 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. 1988).

The rosy boa inhabits rocky shrubland and desert habitats, and is attracted to oases and streams, but does not require permanent water (Stebbins 2003). In the desert it occurs on scrub flats with good cover (Zeiner et al. 1988). Holland and Goodman (1998) add that the species is known in a variety of desert and semi-desert habitats, that it may occur in oak woodlands intergrading with scrub or chaparral habitats, but is absent from grasslands.

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 is recorded in CNDDB within the Live Oak Springs quadrangle. Suitable habitat in the project area includes granitic chamise chaparral, granitic chamise chaparral/montane buckwheat, redshank chaparral, granitic northern mixed chaparral, and granitic northern mixed chaparral/montane buckwheat.

Northern Red-Diamond Rattlesnake (*Crotalus ruber*) - CDFW SSC/County Group 2

The northern red-diamond rattlesnake is a CDFW 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 project area and surrounding 6-quad quadrangle search. Within the project area suitable habitat includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

Blainville's Horned Lizard (*Phrynosoma blainvillii*)- CDFW SSC and a County Group 2

Blainville's horned lizard (previously coast horned lizard) is a CDFW 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.).

This species is recorded in the CNDDB 6-quad search and one Blainville's horned lizard observation was made within the project area (Figure 5A). Suitable habitat includes sandy soils within coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

Birds

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 in the central portion of the project area within granitic chamise chaparral (Figure 5A).

Mammals

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*)- CDFW SSC/County Group 2

The San Diego black-tailed jackrabbit is a CDFW 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 is recorded by CNDDB in the project area and numerous observations of this species were recorded on site, primarily within scrub and chaparral habitats (Figure 5A). It can occur within a variety of shrub and woodland habitats within the project area, including coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat, red shank chaparral, scrub oak chaparral, and disturbed land.

San Diego Desert Woodrat (*Neotoma lepida intermedia*) - CDFW SSC/County Group 2

San Diego desert woodrat is a CDFW 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 project area and the presence of San Diego desert woodrat was observed within the project area in the form of woodrat middens. Suitable habitat within the project area includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, 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. 1990b). 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.

Multiple observations of mule deer were recorded within the project area but were not mapped. Because this species is not considered special-status by state or federal agencies, it is not tracked in CNDDB. Suitable habitat in the project area includes coast live oak woodland, big sagebrush scrub, montane buckwheat scrub, disturbed montane buckwheat scrub, granitic chamise chaparral, granitic chamise chaparral/montane buckwheat scrub, granitic northern mixed chaparral, granitic northern mixed chaparral/montane buckwheat scrub, red shank chaparral, scrub oak chaparral, and disturbed land.

1.4.7 Wetlands/Jurisdictional Waters

The results of the jurisdictional delineation conducted in 2012/2013, performed by Dudek, concluded there are jurisdictional waters and potentially jurisdictional wetland areas within the project area. Jurisdictional waters, including wetlands, were not detected within the solar farm site in 2012. Jurisdictional waters and potentially jurisdictional wetlands were detected in 2013 within the gen-tie alignment site. Details regarding the findings from the formal jurisdictional delineations in 2012 and 2013 are discussed according to each project component (i.e., solar farm site and gen-tie alignment site) below.

1.4.7.1 Solar Farm Site

Potential Wetlands

Within the solar farm site there is an area mapped as open water. This 0.10-acre area of open water was not inundated or saturated during the field investigation, but did show signs of ponding (i.e., cracked soils) and supported some hydrophytic vegetation. The area supports some wetland indicators; however, this area is not considered jurisdictional because of its isolated and artificial nature and because it is small and of limited function and value (Figure 6).

Results of the three sampling data stations (Table 1-3) document that this open water area is characterized by a variety of soil textures (i.e., silty clay loam, sandy clay loam, loamy sand, and sand) and hydric soil characteristics (i.e., redox depressions and depleted matrix). Wetland hydrology indicators present include oxidized rhizospheres along living roots and surface soil cracks.

Table 1-3
Data Station Point Summary

Data Station	Wetland Determination Field Indicators			Stream Association	Determination	Jurisdiction
	Vegetation	*Hydric Soils*	*Hydrology*			
1		✓	✓	No	Isolated wetland	None[1]
2	✓	✓	✓	No	Isolated wetland	None[2]
3				No	Upland	None

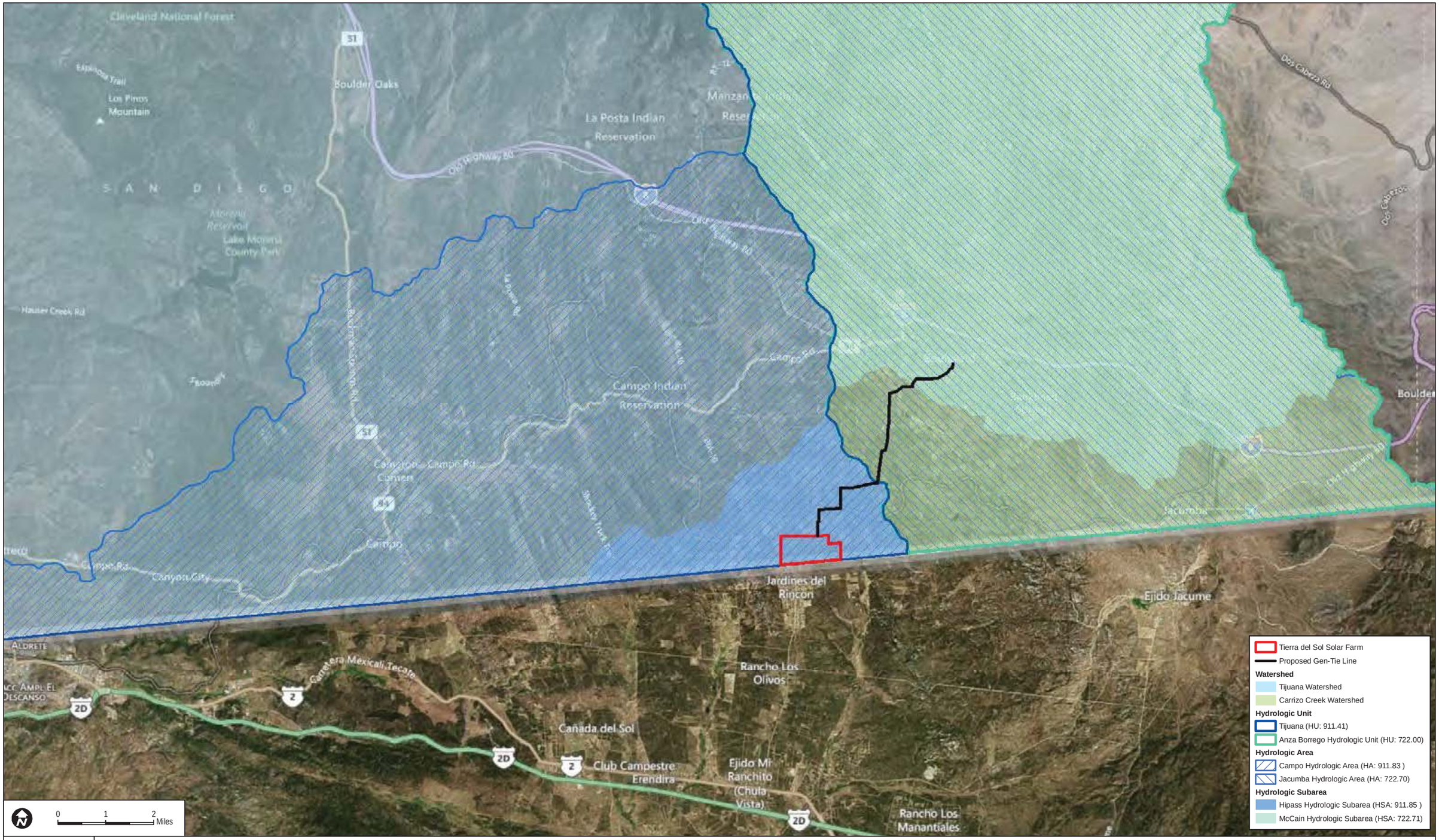
1 Although two of three field indicators for wetlands were met, area is considered exempt from a RPO wetlands designation.
2 All three field indicators for wetlands were met; however, results of the significant nexus determination concluded no hydrologic connectivity to a TNW or tributary to a TNW (i.e., no significant nexus). Area is considered exempt from a RPO wetlands designation.

RPO Wetland Determination

Although this open water area does meet standard RPO wetland criteria, the RPO provides an exemption for areas which have wetland attributes (1) solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that they: (i) have negligible biological function or value as wetlands; (ii) are small and geographically isolated from other wetland systems; (iii) are not being a vernal pool; and, (iv) do not have substantial or locally important populations of wetland dependent sensitive species (County of San Diego 2007).

(i) have negligible biological function or value as wetlands;

This open water area was likely established because of a man-made berm placed at the downstream, eastern end of the open water area. The approximately 5-foot tall berm likely interrupts surface water flows causing an impoundment of water. Vegetation is limited to the edge of the open water and consists of a willow sapling and some herbaceous vegetation.



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SOURCE: U.S. Geological Survery National Hydrography Dataset (USGS 2012)

FIGURE 6A

Hydrologic Setting

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Thus, the wetland attributes (vegetation, soils and hydrology) present in the area are artificial in nature. The open water area has limited potential function as a wetland based primarily on its small size (0.10 acre), location in the upper portion of the watershed, lack of connectivity with lower portions of the watershed, and limited vegetation. Based on these factors, the area likely has:

- low function for nutrient retention and transformation (due to limited vegetated area and lack of connectivity within the watershed),
- low function for toxicant trapping (due to limited vegetation and lack of toxicant source in watershed)
- low to moderate potential for groundwater recharge (due to limited area of inundation),
- low to moderate potential for flood flow medication and flood storage (due to limited area to inundation),
- low potential for sediment trapping (due to small watershed, limited vegetation),
- low potential for wildlife habitat (due to limited vegetated area),
- low potential for aquatic habitat (due to limited ponding duration, small size of wetland), and
- no potential for public use (due to location on private property).

It is important to note that the feature's greatest functions (i.e., groundwater recharge, flood flow modification, and flood storage) are primarily due to the artificial impoundment. This artificial impoundment has the detrimental effect of interrupting flows within the watershed. In the absence of the impoundment and berm, water would flow naturally through the site unimpeded. Therefore, taken as a whole, the wetland is considered to have negligible function and value as a wetland.

(i) are small and geographically isolated from other wetland systems

As discussed above and is clearly represented geographically, the wetland is small and geographically isolated. The open water area is in the upper portion of the watershed approximately 1,500 feet downstream from the crest of the hill to the west and approximately 4,000 feet upstream of the blue-line stream, dominated by oak woodlands, east of the open water. The berm at the downstream end of the open water area restricts surface water flows from the wetland downstream to the blue-line stream east of the project site. Therefore the wetland is small (0.10 acre) and isolated.

(ii) are not being a vernal pool

A botanical inventory of the project site has been completed and no vernal pool indicator species, as defined by ACOE (1997) were identified within this open water area, or within other portions of the project.

(iii) do not have wetland dependent sensitive wildlife species

Finally, the open water area does not support any populations of wetland dependent sensitive wildlife species. Such species typically include riparian-dependent species such as least Bell's vireo and yellow-breasted chat or aquatic species such as San Diego fairy shrimp. None of these species have been identified or are expected to occur given the very limited resource that the open water wetland provides. The sensitive species that have been identified on site, including several plant and wildlife species, all are primarily associated with upland scrub and chaparral communities. Some wildlife species may occasionally utilize the open water as a water source; however these species are not wetland dependent, but rather are dependent on upland scrub and chaparral habitats.

Therefore, this particular location is not an RPO wetland because it meets the exemption for areas which have wetland attributes solely due to man-made structures.

ACOE/CDFG/RWQCB Wetland Determination

The 0.10-acre open water area within the solar farm site does not meet ACOE and RWQCB criteria for jurisdictional wetlands because it is hydrologically isolated from downstream waters (e.g., TNW, RPW or non-RPW) such as the unnamed blue-line stream located northeast of the site (i.e., no significant nexus). The nearest TNW's to the site include the Pacific Ocean and Salton Sea, both of which are approximately 50 linear-miles west and east of the site, respectively. The nearest blue-line streams are two unnamed tributaries to the Tijuana River; one located approximately 175-1,200 feet to the east of the eastern project site boundary and the other located approximately 3,500 feet to the west of the western project site boundary (Figure 6). The eastern blue-line stream was reviewed from public roads, is dominated by coast live oak woodland and rural residential/agricultural lands, and appears to have inconsistent OHWM and very sporadic wetlands in this vicinity. There are no obvious wetlands or stream channels extending from the project site boundaries to these blue-line streams.

Based on the results of the jurisdictional delineation and completion of the Approved Jurisdictional Determination Data Forms, the open water area within the solar farm site does not have a significant nexus through surface or groundwater to waters of the U.S. and therefore is mapped as isolated and considered non-jurisdictional. The open water area within the solar farm site does not meet CDFW jurisdictional criteria because it is not associated with a lake or streambed.

Potential Non-Wetland Waters

The solar farm site was also surveyed to determine if there are drainages with an OHWM that could convey runoff off site. Although drainage swales were observed in some areas of the solar farm site, none of these areas exhibited a consistent OHWM, such as bed and bank topography. These swales are characterized by unvegetated, sandy areas, mostly with bed and bank topography limited to less than 6-inch deep cuts approximately 1 foot apart. In one location, a more defined bed and bank (up to 3 feet deep and 1 foot wide) is present in a single 1,000-foot reach in the middle of the site, but areas "downstream" showed no OHWM. A few other short reaches (each less than 250 linear feet) have a distinctive bed and bank (approximately 1 foot deep and 1 foot wide), but the majority of the topographic low points on site, including areas adjacent to the boundaries of the site, do not support any OHWM. Therefore, site evidence, as well as investigations of off-site areas, indicates that runoff does not leave the solar farm site but presumably infiltrates within the site.

No wetlands or waters of the U.S. under the jurisdiction of ACOE, RWQCB, CDFW, or County were identified within the solar farm site.

1.4.7.2 Gen-Tie Alignment Site

Wetlands Determination

Results of the seven sampling data stations (Table 1-4) indicate that there are a total of three riparian habitats and one wetland mapped within the gen-tie alignment (Figure 4C). One riparian habitat is mapped as wet montane meadow and is under the jurisdictional of CDFW and the County. It is adjacent to Data Stations 2 and 3 in the southwestern section of the alignment, and is 0.07 acre. The second riparian habitat is mapped as southern willow scrub and is under the jurisdictional of CDFW and the County. It is located adjacent to Data Station 4 just north of the wet montane meadow, and is 0.38 acre. The third riparian habitat is mapped as coast live oak woodland and is under the jurisdictional of CDFW and the County. The coast live oak woodland extends beyond the study area, and Data Station 5 is located outside the study area to capture the full extent of this riparian habitat. It is 0.15 acre and is located near the middle of the gen-tie alignment.

The one wetland area under the jurisdiction of ACOE, CDFW, RWQCB, and the County is mapped as southern willow scrub in an artificial impoundment which supports hydrophytic vegetation (e.g., willows), hydric soils (e.g., sandy, loam, depleted matrix), and surface water. This wetland is located adjacent to Data Station 7 in the northeastern region of the alignment and is 0.13 acre. Because this area meets all three wetland determination indicators (hydrophytic

vegetation, hydric soils, and hydrology), it is jurisdictional under the ACOE as well as CDFW, RWQCB, and the County.

Table 1-4
Data Station Point Summary[2]

Data Station	Wetland Determination Field Indicators			Stream Association?	Determination	Jurisdiction
	Vegetation	*Hydric Soils*	*Hydrology*			
1				No	Upland	None
2			✓	Yes	Water table and saturation present; located in stream channel; on edge of wet montane meadow	None
3				No	Upland; on secondary bench of floodplain	None
4	✓		✓	Yes	In channel; in understory of willows	CDFW/County
5			✓	Yes	In channel with surface water present; in oak woodlands	CDFW/County
6	✓	✓	✓	No	Artificial impoundment; in southern willow scrub	ACOE/CDFW/RWQCB/County
7				Yes – blue line stream	Upland	None

RPO Wetland Determination

The four riparian habitats/wetlands mapped within the gen-tie alignment meet the County's RPO wetland definition. These wetlands support hydrophytic vegetation (i.e., willows, juncus) and are associated with stream channels. Although all are relatively small in size, they all form a nexus with other hydrological processes in the region and support important wetland features.

The riparian habitat mapped as wet montane meadow supports Mexican juncus and other hydrophytic vegetation, and is surrounded by an unvegetated stream channel; therefore this meadow meets the definition of an RPO wetland. The riparian habitat mapped as coast live oak woodland supports coast live oak along the banks of an unvegetated stream channel as well as occasional hydrophytic herbs. The southern willow scrub mapped under the jurisdiction of CDFW and the County supports both hydrophytic vegetation (red willows, juncus, and sedges) and hydrology (drainage patterns). It is located just north of the wet montane meadow and is part of the same direct hydrological system. The southern willow scrub wetland under the jurisdiction

[2] Data station 5 is located outside gen-tie alignment and buffer. However, this data station was used to determine the extent of the wetland mapping and to delineate wetland polygons.

of the ACOE, CDFW, RWQCB, and County was created from an artificial impoundment. Although this wetland is man-made, it supports the necessary wetland criteria and forms a nexus with downstream hydrology.

Potential Non-Wetland Waters

The gen-tie alignment site was surveyed to determine the presence of an OHWM along several potential drainage channels. An OHWM was identified along several stream channels based on an observed, defined bed and bank and other evidence of hydrology. According to the National Hydrographic Database (NHD), multiple creeks/streams flow within the gen-tie alignment; specifically, Boundary Creek (blue-line stream channel) is mapped in the northern portion of the alignment, one tributary to Boundary Creek is mapped in the central portion of the alignment, and two unnamed stream channels are mapped within the southwest portion of the alignment (U.S. Geological Survey (USGS) 2013). All of these drainages observed on site had a defined bed and bank, evidence of an OHWM, a channel bed of 1 to 3 feet wide, and were continuous for greater than 250 linear feet; thus, were determined to be jurisdictional waters. In total, there is approximately 0.58-acre of jurisdictional waters of the U.S./state identified within the gen-tie alignment site. These waters do not meet any one of the three criteria required to be considered a County RPO wetland. Flows within these drainages are directed southward into Mexico and ultimately connect with the Tijuana River.

RPO Wetland Buffer

County Guidelines for Determining Significance (2010a) provide the following examples for the establishment of appropriate RPO wetland buffers, to be based on the best available science:

A 50-foot wetland buffer would be appropriate for lower quality RPO wetlands where the wetland has been assessed to have low physical and chemical functions, vegetation is not dominated by hydrophytes, soils are not highly erosive, and slopes do not exceed 25%.

A wetland buffer of 50 to 100 feet is appropriate for moderate- to high-quality RPO wetlands that support a predominance of hydrophytic vegetation or wetlands within steep slope areas (greater than 25%) with highly erosive soils. Within the 50- to 100-foot range, wider buffers are appropriate where wetlands connect upstream and downstream, where the wetlands serve as a local wildlife corridor, or where the adjacent land use(s) would result in substantial edge effects that count not be mitigated.

Wetland buffers of 100 to 200 feet are appropriate for RPO wetlands within regional wildlife corridors or wetlands that support significant populations of wetland-associated sensitive species or where stream meander, erosion, or other physical factors indicate a wider buffer is necessary to preserve wildlife habitat.

Buffering of greater than 200 feet may be necessary when an RPO wetland is within a regional corridor or supports significant populations of wetland-associated sensitive species and lies adjacent to land use(s) that could result in a high degree of edge effects within the buffer. Although the RPO stipulates a maximum of 200 feet for RPO wetland buffers, actions may be subject to other laws and regulations (such as the Endangered Species Act) that require greater wetland buffer widths.

The RPO wetlands within the gen-tie alignment are located along unvegetated stream channels that feed generally south and southeast towards Mexico. The wetlands are characterized by hydrophytic vegetation, such as juncus and willows. As the topography of the gen-tie alignment is shaped by the hilly topography in the vicinity, these wetlands occur primarily within valleys or adjacent to the hillside slopes. In general, the alignment does not support important or unique wildlife movement functions for wetland species or wildlife in general (see Section 1.4.8, below). These RPO wetlands do not occur in areas where slopes are extremely steep or where soils are highly erosive. Furthermore, overall function and value of wetlands on site is low to moderate due to the limited wetland vegetation diversity, lack of channel topography, limited aquatic habitat, and public use, all of which are a result of the small size of these features. The gen-tie alignment, as a linear project, will not substantially impact the function and integrity of the regional hydrology because flow will still occur unimpeded in the same direction. Finally, edge effects of current or future conditions are of relatively low intensity compared with urban or even rural residential land uses. Given these factors, a 50-foot wetland buffer for this use is considered adequate to protect the RPO wetlands within the gen-tie (Figure 4C).

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, similar topographic relief, and similar vegetation communities. The area is not readily identifiable as a corridor per se, because wildlife movement is not constrained or directed through the project area.

The proposed project vicinity is surrounded by includes rural residences to the north, east, and west, and an impermeable fence that restricts all wildlife at the border of Mexico to the south. While

residential uses are present, the project area is still included within a Core Wildlife Area due to its size and the undeveloped land in the surrounding area (particularly to the east). ~~In addition,~~

The solar farm site itself is fenced with barb-wire, which is not a constraint to wildlife movement, but there are the residence to the immediate east of the project is surrounded by more restrictive large chain-link fences. These fenced areas still allow small reptiles, amphibians, and mammals to pass through; however, will not provide movement for larger species. All of these factors limit the ability of wildlife to access and traverse the solar farm site. Due to the constrained nature of the site, While movement is somewhat constrained by specifically the fencing surrounding the project and to the south and east, the project site also is fairly uniform in topography and resources. Therefore it is unlikely to serve as a local or regional wildlife corridor (Figure 7). The gen-tie alignment contains barbwire fencing along the perimeter of the two large blocks of land. The alignment to the north and west of that area contain sporadic fencing, much of which was damaged in the Shockey Fire. The southern portion of the alignment is located immediately adjacent to Tierra del Sol Road and private property, and is fenced in areas. The residences and fencing in this portion of the project area are a constraint to wildlife movement. The remaining alignment is a linear feature that traverses over large spans of undeveloped lands. Fencing may be located throughout the undeveloped lands but would not be considered a barrier to wildlife movement.

The Laguna Mountains are west and 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 2010). 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). On the other hand, the project area does not support any large bodies of water or wetlands that attract large migration stopovers or attractants for avian and bat species. 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.

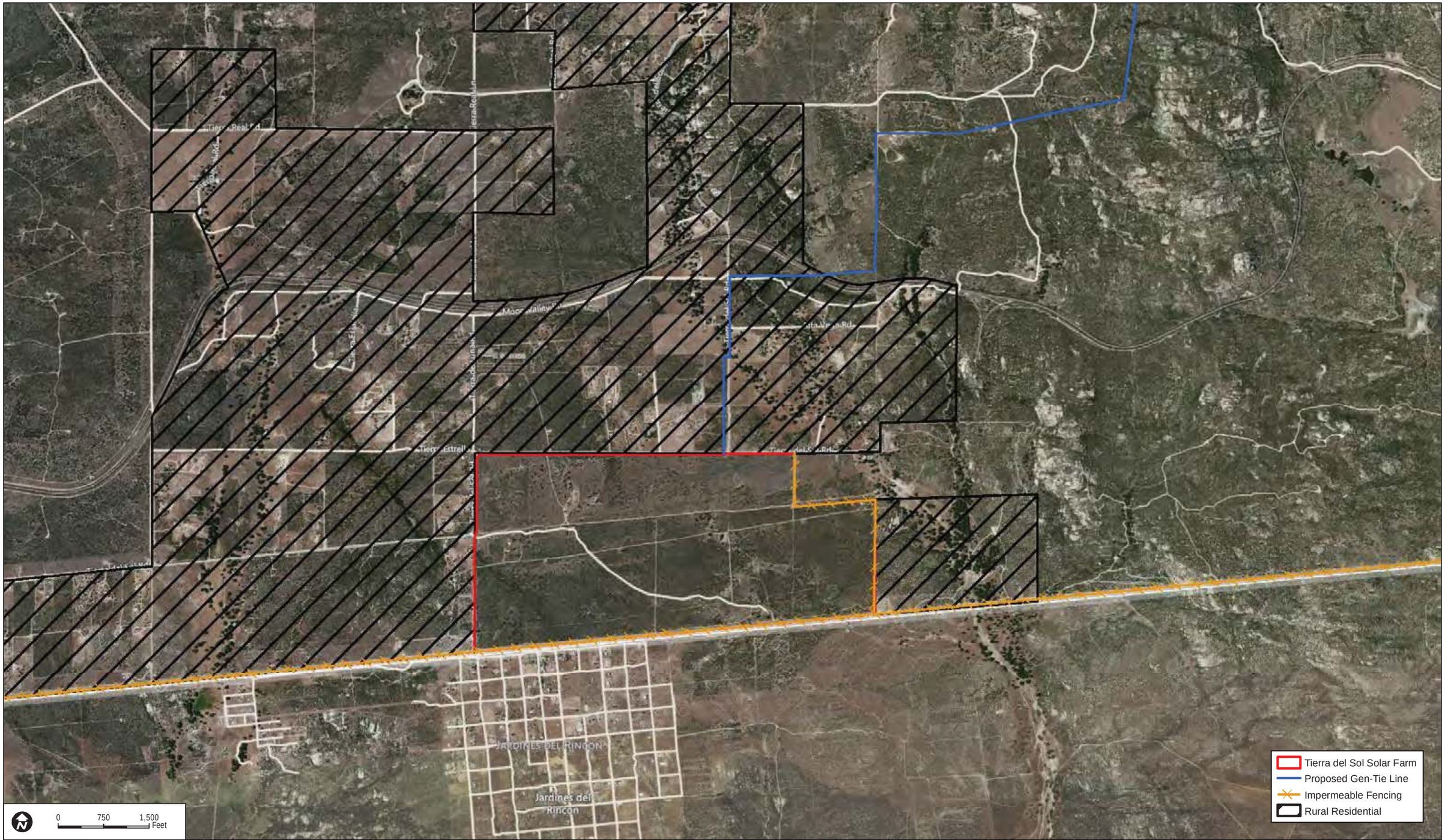
Although many species of migrants have been documented to migrate at high altitudes, from 500 to 2,000 feet (Williams 1950), most migrants flying over or near the ocean migrate at lower altitude, below 300 feet above ground (Hüppop et al. 2006). Birds migrating over terrestrial locations appear to migrate at higher altitudes, but do not frequently exceed 1,500 feet above ground (Cooper and Ritchie 1995). Larger birds, such as ducks and geese, are frequently observed up to 7,000 feet (FAA 2010). Night-migrating birds that may pass through the region migrate at heights of 600 to 2,400 feet, with the lower end of this range occurring when traveling over ridgelines (Mabee et al. 2006).

Special Habitat Management Areas

Several regional habitat management programs are planned for the eastern San Diego County, including an MSCP Framework Management Plan (FMP), 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.

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 jurisdiction and agencies to ensure conservation goals and policies are implemented and successful. The MSCP includes three subareas each containing a separate conservation plan. The three subareas are North County, South County, and East County. Only the South County MSCP Subarea Plan is approved.

The Proposed Project is located within the future 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 2008) which is intended to establish if their approval would have an effect on the preparation and approval of the future ECMSCP



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SOURCE: Bing Maps

FIGURE 7

Wildlife Corridors and Habitat Linkages

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The Nature Conservancy's cross-border project, the Las Californias Binational Conservation Initiative, functions as a binational partnership between the Nature Conservancy and Mexico's Pronatura, and it is intended to establish an interconnected conservation network and sustaining ecosystem process along the U.S./Mexico border region. The proposed binational conservation network, which includes lands from downtown San Diego, east to the Laguna Mountains, south to the southern extent of the Sierra Juarez mountain range, and west to Salsipuedes, consists of a vision report containing general objectives and land designations that coincide with specific conservation objectives and functions.

In 2008, BLM established the Eastern San Diego County Resource Management Plan (RMP). The intent of the Eastern San Diego County RMP and Final EIS is to update the 1981 Eastern San Diego County Management Framework Plan (MFP) and direct future land uses and land management within the Eastern San Diego Planning Area. The RMP addresses conflicts among various recreational users accessing BLM lands, provides direction for future site-specific development including renewable energy projects, and provides for monitoring to determine the effectiveness of BLM land management strategies. The RMP stresses that future policy decisions and land management strategies shall be compatible with the multiple use mission of the BLM. The multiple use mission promotes recreational use and responsible development within BLM-managed lands while maintaining environmental quality of the land.

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 (NOAA), and National Marine Fisheries Service (NMFS). 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 (EO) 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 EO requires federal agencies to work with the

USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species.

Pursuant to Section 404 of the CWA, the 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 ground water 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 the 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, the 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 the California Endangered Species Act (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, Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA Section 401 certification.

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).

2.0 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 area where the limits of grading and fuel modification are proposed (i.e., Development Footprint). For the gen-tie alignment, direct impacts also include areas of vegetation removal and where underground digging will occur. Direct impacts were quantified by overlaying the limits of grading on geographic information system (GIS)-located biological resources (Figures 8A through D).

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 California Environmental Quality Act (CEQA) document being prepared for the project.

Following the County Guidelines (County of San Diego 2010a–b), areas that are not being directly impacted but cannot be counted toward mitigation will be considered "impact neutral"; these areas include isolated pockets of undeveloped lands. At this time, all areas that are not impacted by the limits of grading, fuel modification, or access road are considered impact neutral.

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. 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. The significance determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.0.

2.2.1.2 Permanent Direct Impacts

Long-term or permanent direct impacts to vegetation communities were quantified by comparing the impact footprint with the boundaries of the vegetation communities mapped in the project area. Direct impacts to vegetation communities would occur as a result of grading activities. Table 2-1 shows the acreage of direct impacts to vegetation communities in the project area as a result of the limits of grading (Figures 8A–D). The significance determination for these impacts is determined through application of the County Significance Guidelines described in Section 3.1.

Table 2-1
Direct Impacts to Habitat Types/Vegetation Communities

Habitat Types/Vegetation Communities	Existing Acreage (Ac.)[1]		Development Footprint			Impact Neutral
	TDS	*Gen-Tie*	*Limits of Grading (Ac.)*	*Fuel Modification (Ac.)*	*Gen-Tie*	*Undeveloped Lands*
Upland Scrub and Chaparral						
Big Sagebrush Scrub*	16.2	0.9	16.1	0.1	0.0	1.0
Montane Buckwheat Scrub*	41.0	18.2	38.1	2.8	0.8	17.4
Disturbed Montane Buckwheat Scrub*	2.3	—	2.3	0.0	0.0	0.0
Montane Buckwheat Scrub/Red Shank Chaparral*	2.0	—	2.0	0.0	0.0	0.0
Granitic Chamise Chaparral*	177.0	—	155.5	21.4	0.0	0.1
Granitic Chamise Chaparral/Montane Buckwheat Scrub*	2.2	—	2.2	0.0	0.0	0.0
Granitic Northern Mixed Chaparral*	68.2	113.2	58.4	9.7	7.1	106.1
Granitic Northern Mixed Chaparral/Montane	13.3	—	13.3	0.0	0.0	0.0

Table 2-1
Direct Impacts to Habitat Types/Vegetation Communities

Habitat Types/Vegetation Communities	Existing Acreage (Ac.)[1]		Development Footprint			Impact Neutral
	TDS	*Gen-Tie*	*Limits of Grading (Ac.)*	*Fuel Modification (Ac.)*	*Gen-Tie*	*Undeveloped Lands*
Buckwheat Scrub*						
Red Shank Chaparral *	68.5	38.6	66.1	2.3	1.4	37.3
Scrub Oak Chaparral*	6.0	3.7	3.7	2.3	0.6	3.1
Subtotal	*396.7*	*174.6*	*357.7*	*38.6*	*9.9*	*164.6*
Woodland						
Coast Live Oak Woodland*	0.9	6.6	0.9	0.0	0.3	6.3
Disturbed Coast Live Oak Woodland*	—	3.8	0.0	0.0	0.3	3.5
Subtotal	*0.9*	*10.4*	*0.9*	*0.0*	*0.6*	*9.8*
Riparian						
Southern Willow Scrub*	—	0.5	0.0	0.0	0.0	0.5
Wet Montane Meadow*	—	0.07	0.0	0.0	0.0	0.07
Subtotal	—	*0.6*	*0.0*	*0.0*	*0.0*	*0.6*
Non-Native Communities and Land Covers						
Urban/Developed	—	4.8	0.0	0.0	0.2	4.6
Disturbed Land	21.9	11.7	13.3	7.9	0.3	11.7
Non-Native Grassland*	—	7.7	0.0	0.0	0.3	7.4
Open Water	0.1	—	0.1	0.0	0.0	0.0
Subtotal	*22.0*	*24.2*	*13.4*	*7.9*	*0.8*	*23.7*
Total	**419.5**	**209.8**	**372.0**	**46.5**	**11.3**	**199.1**

[1] Totals may not add due to rounding.
* Vegetation community is considered special-status by the County and requires mitigation.

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 and dewatering, which may affect adjacent and downstream aquatic, wetland, and riparian 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 determination for these potential impacts is determined through application of the County Significance Guidelines described in Section 3.0.

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 are described in Section 2.2.2.1.