INDEPENDENT ENERGY SOLUTIONS, INC. (IES)/
SAN DIEGO GAS & ELECTRIC (SDG&E)
SOLAR ENERGY PROJECT - RAMONA

BIOLOGICAL IMPACT ANALYSIS REPORT
(County of San Diego Record ID PDS2014-MUP-14-013;
Environmental Log No. PDS2014-ER-14-09-003)

May 15, 2015

Applicant:

Independent Energy Solutions, Inc.
Contact: Eric Johnston
1090 Joshua Way
Vista, CA 92081
Phone: (760) 752-9706
Fax: (760) 752-9758
E-mail: ejohnston@indenergysolutions.com

Prepared For:

County of San Diego
Contact: Michael Johnson
5510 Overland Avenue, Suite 110
San Diego, CA 92123-1666
Phone: (858) 694-3429
E-mail: Michael.johnson1@sdcounty.ca.gov

Prepared by:

Merkel & Associates, Inc.
Contact: Amanda K. Gonzales, Project Manager
5434 Ruffin Road
San Diego, California 92123
Phone: (858) 560-5465
Fax: (858) 560-7779
E-mail: agonzales@merkelinc.com

Amanda K. Gonzales, Senior Biologist/Project Manager

Keith W. Merkel, County Approved CEQA Consultant/Principal Consultant

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

GLOSSARY OF TERMS AND ACRONYMS

AC	Alternating Current
AJD	USACOE Approved Jurisdictional Determination
BMP	Best Management Practice
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CPUC	California Public Utilities Commission
County	County of San Diego
CWA	Clean Water Act
CY	cubic yards
DG	Decomposed Granite
ESA	(federal) Endangered Species Act
ESL	Environmentally Sensitive Lands
ESRI	Environmental Systems Research Institute
FAC	Facultative Plants
FACW	Facultative Wetland Plants
FACU	Facultative Upland Plants
FGC	California Fish and Game Code
GPS	Global Positioning System
GIS	Geographical Information System
HCP	Habitat Conservation Plan
IES	Independent Energy Solutions, Inc.
kV	Kilovolt
LSA	Lake and Streambed Alteration
M&A	Merkel & Associates, Inc.
MMU	Minimum Mapping Unit
MSCP	County of San Diego Multiple Species Conservation Plan
MSL	Mean Sea Level
MOU	Memorandum of Understanding
MUP	Major Use Permit
MW	Megawatts
NCCP	Natural Community Conservation Planning Act
NTCHS	National Technical Committee for Hydric Soils
OBL	Obligate Wetland Plants
OHWM	Ordinary High Water Mark
PAMA	San Diego County Pre-Approved Mitigation Area
PJD	USACOE Preliminary Jurisdictional Determination
PV	Solar Photovoltaic
RHA	Rivers and Harbors Act
RPO	San Diego County Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SDG&E	San Diego Gas & Electric
SEP	Solar Energy Project
Sq. Ft.	Square Feet

SWANCC	Solid Waste Agency of Northern Cook County
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACOE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

SUMMARY (ABSTRACT)

Merkel & Associates, Inc. (M&A) has prepared this biological impact analysis report for the proposed Independent Energy Solutions, Inc. (IES)/San Diego Gas & Electric (SDG&E) Solar Energy Project – Ramona facility (County of San Diego Record ID PDS2014-MUP-14-013; Env. Log No. PDS2014-ER-14-09-003), at the request of IES (project applicant), written in accordance with the County of San Diego (County) Project Memorandum of Understanding (MOU) and current Biological Resources Report Format and Content Requirements [for] Biological Resources (County 2010a). The purpose of this report is to document the existing biological conditions within the project study area; identify potential impacts to biological resources that could result from implementation of the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with the California Environmental Quality Act (CEQA) and the County of San Diego Resource Protection Ordinance (RPO).

The project site is located within an unincorporated area of the County, at the northwestern intersection of Creelman Lane and Ashley Road, Ramona, California, 92065 on a portion of Assessor Parcel Number 284-340-35.

IES is preparing a Major Use Permit (MUP) application for development and operation of a photovoltaic (PV) solar facility to be located on SDG&E owned property. IES has been contracted to engineer and obtain permits for the Solar Energy Project (SEP) which will be owned and operated by SDG&E. The project would require approval of an MUP by the County to allow for the construction, operation, and maintenance of the facilities for the long-term generation of solar energy. The proposed facility would have an overall production capacity of approximately 4.0 Megawatts (MW) (alternating current). Power produced at the site would supply power to the local community. The proposed project would be constructed in one phase on an approximate 37.2-acre parcel to achieve the intended MW output; however, the MUP area would be limited to approximately 18.3 acres; the remaining acreage would remain in its present undeveloped state. The MUP acreage is comprised of the following elements: solar facility (i.e., limits of the security chain link fencing); widening of the existing driveway; landscape screening, all of which are considered onsite project elements; and the underground utility trench for the interconnect pole and construction of Dye Road Pathway within the right-of-way of Creelman Lane, both of which are considered offsite project elements.

The project site is located within a semi-rural residential community, just southeast of the Ramona Village Center. The parcel is bound by chain link fence and has two gated entrance points, one off Creelman Lane and a second off Ashley Road. The majority of the project site is currently leased by Solana Select, a palm tree nursery. The primary crops are non-native palms consisting of Canary Island palm (*Phoenix canariensis*) harvested in the ground along the southern, western, and eastern perimeters of the parcel and queen palm (*Syagrus romanzoffiana*) in container pots in the interior portion of the site. The lease between SDG&E and the tenant has been in effect since 1998. Upon

termination of the lease, the tenant and SDG&E would be responsible for returning the land to conditions prior to the start of nursery operations; this includes removing all palm trees and associated sheds from the parcel. The land outside of the nursery operation is undeveloped and supports relatively dense non-native grassland with drainage features meandering in a northwesterly direction. Overall, the site is bound by semi-rural residential development in which the density of lots is greater to the north and west.

The biological study area (BSA) includes 100 feet beyond the project site (i.e., project MUP area including solar facility, entrance off Creelman Lane, landscape screening, and offsite interconnect pole) as approved by the County (2013b). It should be noted that M&A evaluated a larger project area, inclusive of the BSA in 2012 and 2013 prior to determination of the project MUP area. The initial evaluation was conducted in association with an existing conditions analysis of the parcel to assist in project design (M&A 2013a).

The BSA is located within the draft North County Multiple Species Conservation Program (MSCP) Subarea Plan. The northeastern portion of the BSA lies within the Eastern Ramona Core Planning Unit (Core 15) of a Pre-Approved Mitigation Area (County 2009). The BSA is located just outside (i.e., west) of Survey Area 2 of the U.S. Fish and Wildlife Service recommended survey area for the federally listed endangered quino checkerspot butterfly (*Euphydryas editha quino*) (USFWS 2005 and 2013 pers. comm.). The BSA is bisected in a southeast to northwest direction by County floodway and 100-year floodplain (i.e., Ramona South Creek).

Five vegetation types consisting of non-native grassland, intensive agriculture (i.e., palm tree nursery), eucalyptus woodland, disturbed habitat, and urban/developed were identified on the project site during the biological surveys.

A total of three special status species were identified within the BSA during the biological surveys. They are limited to avian species, the red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), and white-tailed kite (*Elanus leucurus*). Red-shouldered hawk and turkey vulture are both listed on the County's Animal Group 1 list (i.e., Animals rare, threatened or endangered in California and elsewhere) while the white-tailed kite is a California Department of Fish and Wildlife (CDFW) fully protected species, California Natural Diversity Database (CNDDB) special animal, and on the County's Animal Group 1 list. No nesting was observed onsite and no potentially suitable nesting habitat occurs on the project site. These species are expected to utilize the BSA for foraging and dispersal grounds only.

Two additional special status species are considered to have a moderate potential to occur on the project site: northern harrier (*Circus cyaneus*) and grasshopper sparrow (*Ammodramus savannarum*). Both species are identified as special animals by CNDDB, state Species of Special Concern by CDFW, and are on the County's Animal Group 1 list.

Three drainage features are located onsite and extend into the project parcel. From north to south they are referred to as Drainage 1, Drainage 2 (Ramona South Creek), and an isolated water of the

state (i.e., a portion of Drainage 3). Drainage 1 and 2 lie north of the proposed solar facility but within the landscape screening footprint and convey flow in a northwestward direction through dense non-native grassland. The isolated water of the state (a portion of Drainage 3) lies within the limits of the proposed solar facility.

Drainage 1 and 2 support well defined but discontinuous ordinary high water mark (OWHM) indicators (i.e., drainage patterns) and originate east of Ashley Road. Both are assumed to be jurisdictional, non-navigable waters of the U.S./streambed and regulated by the U.S. Army Corps of Engineers (USACOE) under section 404 of the CWA, RWQCB under section 401 of the Clean Water Act (CWA), Regional Water Control Board (RWQCB) under section 401 of the CWA, and CDFW under section 1602 of the California Fish and Game Code (FGC). The third drainage feature originates within the existing palm tree nursery with well-defined banks but ultimately dissipates into the dense non-native grassland after approximately 110 feet. This system ultimately drains northwestward and connects to Ramona South Creek within the BSA via a discontinuous, wide swale that lacks OHWM indicators (i.e., drainage patterns, drift deposits, etc.). Due to the lack of OHWM indicators over the majority of the swale, only the portion of the drainage that supports well-defined banks within the palm tree nursery is expected to be regulated as an isolated water of the state by CDFW under section 1602 of the FGC and RWQCB under provisions of the Porter-Cologne Water Quality Control Act. These drainages are not considered County RPO wetlands due to the lack of a predominance of hydrophytic vegetation and lack of hydric soils.

The northeastern most portion of the BSA lies within the Eastern Ramona Core Planning Unit (Core 15), a designated wildlife corridor per the draft North County MSCP Subarea Plan. Those lands outside of the limits of Core 15 abut relatively dense semi-rural residential development, and thus, any movement to the west is limited to avian species or urban tolerant meso-predators. In addition, the site lacks topography that typically facilitates wildlife movement including canyon bottoms and/or ridgelines, as well as canopy coverage which is necessary for movement of medium to large sized mammals.

Implementation of the proposed project would result in direct impacts to non-native grassland that would be significant and require project mitigation in accordance with the County Guidelines for Determining Significance [for] Biological Resources (County 2010b). Implementation of the proposed project would also result in direct impacts to isolated waters of the state as a result of shade from panels spanning the narrow drainage over a distance of approximately 110 feet. The potential direct impact to the isolated water of the state due to shading would be considered less than significant per CEQA. However, shading could be seen as a substantial change to a streambed and thus would require notification for CDFW per Section 1602 of the FGC. Lastly, the project could result in impacts to nesting avian species if present onsite and/or adjacent to the site during project construction. Project impacts that could affect the nesting success of ground and tree-nesting raptors would be considered significant and thus require project mitigation measures to reduce impacts to a level below significance. In addition, impacts to active migratory bird nests (if present at the time of

construction) are prohibited under the federal Migratory Bird Treaty Act (MBTA) and FGC §3503 and §3513 and would require project mitigation measures to avoid impacts. The below project mitigation measures must be implemented to reduce impacts to a level less than significant.

Habitat-Based Pre-Construction Mitigation Measures

- Habitat-based mitigation for impacts to 5.1 acres of non-native grassland would be mitigated at a minimum ratio of 0.5:1 through the implementation of the following measure prior to acquisition of the project grading permit: 1) The project applicant would purchase 2.55 acres of non-native grassland from an approved offsite mitigation bank such as Daley Ranch (at a ratio of 0.5:1).

Construction Period Mitigation Measures

- To avoid impacts to County Group 1 special status ground and tree-nesting raptors that could potentially nest onsite and/or within the habitat adjacent to the solar facility, all clearing, grubbing, or grading of vegetation that has a potential to support active nests should not take place from January 15 through July 15, the "restricted work period". If avoidance of the breeding season is not feasible, clearing, grubbing or grading of vegetation may occur during the restricted work period if a qualified biologist conducts a focused survey for active nests within 48-72 hours prior to work in the area (within 300 feet of project construction) and determines the area to be free of nesting birds. If an active County Group 1 special status species nest were found onsite and/or within 300 feet of project construction, then all construction activities undertaken for the project should ensure that project activities generated from the project would not affect the nesting success of the species.
- To avoid impacts to nesting migratory birds, all clearing, grubbing, or grading of vegetation that have a potential to support active nests should not take place from January 15 through September 15, the "restricted work period". If avoidance of the nesting migratory bird breeding season is not feasible, clearing, grubbing or grading of vegetation may occur during the restricted work period if a qualified biologist conducts a focused survey for active nests within 48-72 hours prior to work in the area and determines the area to be free of nesting birds. If an active bird nests were found, then all construction activities undertaken for the project should comply with regulatory requirements of the federal MBTA and FGC §3503 and §3513.

Construction Period Design Measures

- Environmental training would be provided for contractors and construction personnel by the County approved project biologist prior to the start of construction work.
- A Stormwater Pollution Prevention Plan (SWPP) would be obtained for the project and Best Management Practices (BMPs) would be implemented per the SWPPP permit to ensure that offsite sedimentation does not occur.

- Install temporary orange environmental fencing (or similar) along the perimeter of the project footprint (as applicable) prior to the start of the construction activities. The fencing should be installed and maintained by the Contractor under direction of the project biologist and construction manager. Work activities should remain within the defined work areas.
- A monitoring biologist should be onsite during the initial clearing and grubbing of habitat. The biologist should be knowledgeable of upland and wetland biology and ecology.

1.0 INTRODUCTION

1.1. Purpose of the Report

Merkel & Associates, Inc. (M&A) has prepared this biological impact analysis report for the proposed Independent Energy Solutions, Inc. (IES)/San Diego Gas & Electric (SDG&E) Solar Energy Project – Ramona facility (County of San Diego Record ID PDS2014-MUP-14-013; Environmental Log No. PDS2014-ER-14-09-003), at the request of IES (project applicant), in accordance with the County of San Diego (County) Project Memorandum of Understanding (MOU) and current Biological Resources Report Format and Content Requirements [for] Biological Resources (County 2010a). The purpose of this report is to document the existing biological conditions within the project study area; identify potential impacts to biological resources that could result from implementation of the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with all applicable federal, state, and local rules and regulations including the California Environmental Quality Act (CEQA) and the County of San Diego Resource Protection Ordinance (RPO).

1.2. Project Location and Description

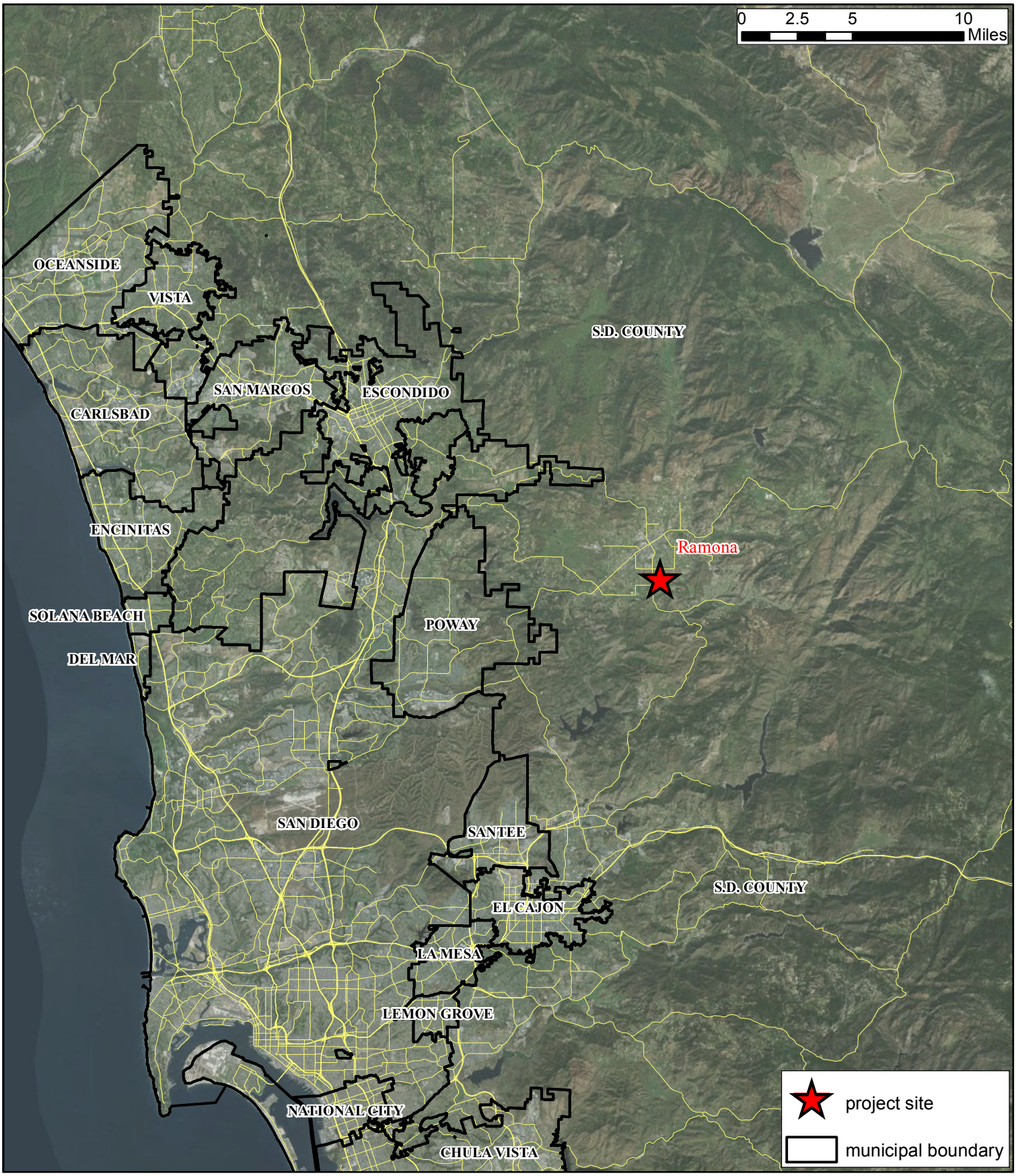
1.2.1. Project Location

The project site is regionally located within an unincorporated area of the County (Figure 1), in unsectioned lands, Township 13 South, Range 1 East of the San Bernardino Base and Meridian, U.S. Geological Survey (USGS) 7.5' Ramona, California Quadrangle (Figure 2).

Locally, the project site is located on a portion of Assessor Parcel Number 284-340-35 (Latitude 33.019507926, Longitude -116.860519604; Universal Transverse Mercator coordinates 513026.814566^{E}, 3653458.23831^{N} Zone 11), at the northwestern intersection of Creelman Lane and Ashley Road, Ramona, California, 92065 (Figure 3).

1.2.2. Project Description

The project site is located within a semi-rural residential community, just southeast of the Ramona Village Center on an SDG&E owned parcel. The parcel is bound by chain link fence and has two gated entrance points for vehicle access; one off Creelman Lane and the second off Ashley Road. An existing roadway and utility easement, approximately 65 feet wide, extending from Casteel Lane through undeveloped land northward to Barnett Road, separates the SDG&E parcel from the private residential lots to the west. Along this western edge of the parcel, the existing fence is located at the western perimeter of the easement rather than the SDG&E parcel boundary. The majority of the proposed project site is currently leased by Solana Select, a palm tree nursery. The primary crops are non-native palms consisting of Canary Island palm (*Phoenix canariensis*) harvested in the ground



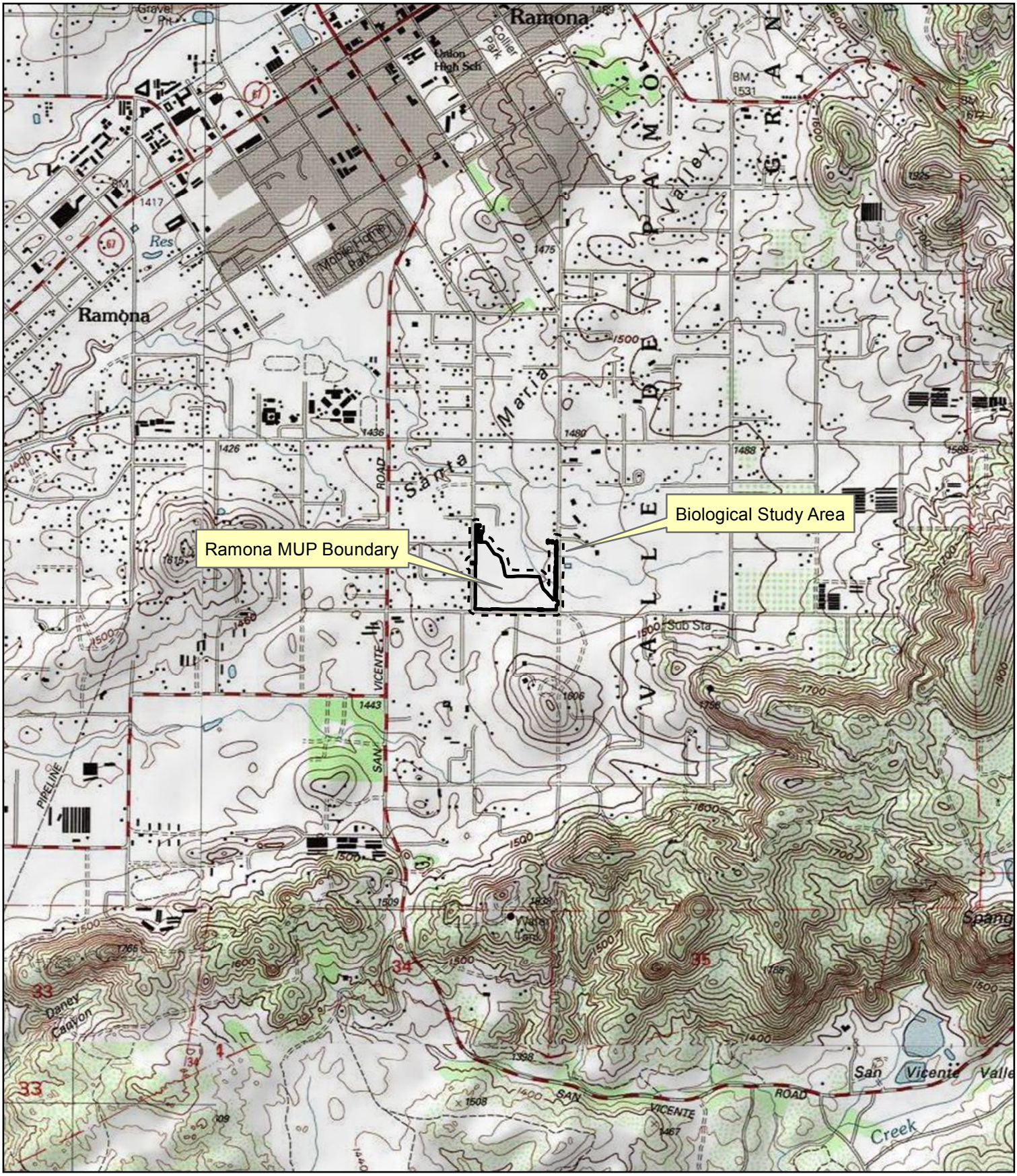
N
W E
S

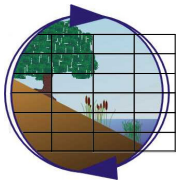
Regional Location Map

IES/SDG&E Solar Energy Project – Ramona
(County Record ID PDS2014-MUP-14-013)

Aerial Source: Microsoft 2012

Figure 1





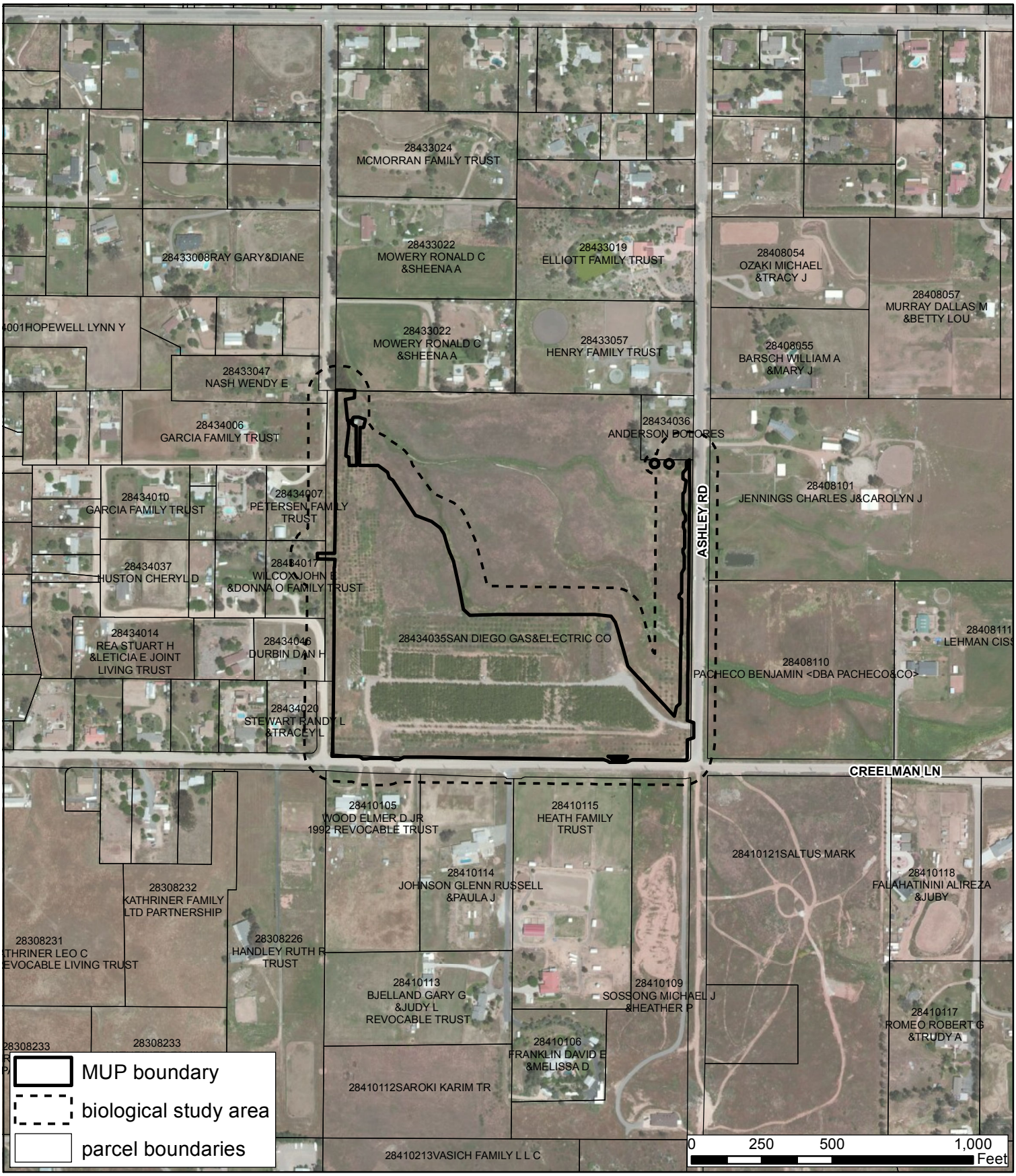
N
W E
S

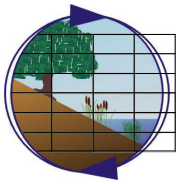
1:24000

Project Vicinity Map

IES/SDG&E Solar Energy Project – Ramona
(County Record ID PDS2014-MUP-14-013)
Source: USGS 7.5' Ramona, CA Quadrangle

Figure 2





N
W E
S

Local Setting Map

IES/SDG&E Solar Energy Project – Ramona
(County Record ID PDS2014-MUP-14-013)

Aerial Source: Microsoft 2012

Figure 3

along the southern, western, and eastern perimeters of the parcel and queen palm (*Syagrus romanzoffiana*) in container pots in the interior portion of the site. The lease between SDG&E and the tenant has been in effect since 1998. Upon termination of the lease, the tenant and SDG&E would be responsible for returning the land to conditions prior to the start of nursery operations; this includes removing all palm trees and associated sheds from the parcel. A small portion of the site (approximately one-acre), within the same general location as the palm tree nursery was recently used as a staging area for the SDG&E Ramona Reliability Project [California Public Utilities Commission (CPUC) Advice Letter 2355-E]; the same staging area is currently being used for the SDG&E TL 637 Wood to Steel Pole Replacement Creelman Substation to Santa Ysabel Substation (CPUC 14-02-004). Use of the site as a staging area for the TL 637 project began in February 2014 and is expected to end in September 2014; activities would end prior to the start of construction of the proposed project. The land outside of the nursery operation is undeveloped and supports dense non-native grassland with drainage features meandering in a northwesterly direction.

IES is preparing a Major Use Permit (MUP) application for development and operation of a photovoltaic (PV) solar facility to be located on SDG&E owned property. The majority of the proposed project occurs within the limits of the existing palm tree nursery but does extend into the adjacent non-native grassland. IES has been contracted to engineer and obtain permits for the Solar Energy Project (SEP), which will be owned and operated by SDG&E. The project would require approval of an MUP by the County to allow for the construction, operation, and maintenance of the facilities for the long-term generation of solar energy. The proposed facility would have an overall production capacity of approximately 4.0 Megawatts (MW) [alternating current (AC)]. Power produced at the site would supply power to the local community. The proposed project would be constructed in one phase on an approximate 37.2-acre parcel to achieve the intended MW output; however, the MUP area would be limited to approximately 18.3 acres of the parcel; the remaining acreage would remain in its present undeveloped state. The MUP area boundary (i.e., project site) is comprised of the following elements: solar facility (i.e., limits of the security chain link fencing); widening of the existing driveway; landscape screening, all of which are considered onsite project elements; and the underground utility trench for the interconnect pole and construction of a maximum 10-foot wide Dye Road Pathway within the right-of-way (ROW) of Creelman Lane, both of which are considered offsite project elements. Below is a detailed description of the project elements.

The project includes the following components: mono-crystalline or poly-crystalline silicon cell PV solar modules treated with an anti-reflective coating mounted on fixed tilt system supported by a ground mount system and in isolated cases where geotechnical constraints are encountered, an appropriate foundation system would be used; inverters, AC switchgear and medium voltage transformers each on a concrete pad within the module array; a 12 kilovolt (kV) pad mounted switchgear connected via an underground utility trench running from a new interconnect pole in the existing utility easement to the switchgear; a 4,000 gallon water tank; and a 24-foot wide perimeter

fire access road (with three-foot shoulders) covered with decomposed granite (DG) to serve as the fuel modification zone, all enclosed by an eight-foot high security chain link fence around the perimeter of the solar facility (BergerABAM 2015).

Permanent access to the project site would be from an existing gated entrance off Creelman Lane, while temporary access (during construction only) would be from an existing gated entrance off Ashley Road. Two additional gates are proposed along the northern perimeter of the security fence to allow SDG&E personnel to access portions of the SDG&E parcel that would otherwise be precluded due to the existing and proposed fence. Low-level outdoor lighting would be installed at this entry gate.

All lighting would be operated manually or activated via motion sensors, and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties.

Landscape screening is proposed along the southern, western, and eastern perimeters of the project parcel in the same general footprint of the existing palm trees. Native shrubs including but not limited to laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), and lemonadeberry (*Rhus integrifolia*), as well as smaller native shrubs with seasonal flowers, such as varieties of sage (*Salvia* sp.), *Ceanothus*, and deergrass (*Muhlenbergia rigens*) are proposed as the landscape screening. Non-native, non-invasive plants are also proposed to be intermixed throughout the landscape screening and include, but are not limited to Afrian sumac (*Rhus lancea*) and lemon bottlebrush (*Callistemon citrinus*). These plant types would help screen the solar facility without shading the PV solar modules. A portion of the landscape screening would occur within County 100-year floodplain; however, plants are not proposed within the County floodway. In addition, plants have been set back approximately 15 feet from the centerline of the bed and bank associated with the drainage in the northeastern corner of the site. Installation of the proposed plants within the floodplain is an allowed use per the County RPO and Ramona Design Guidelines (County 2010b and 1993, respectively) since landscaping is considered a low-intensity use and would not harm the environmental values of the site. Berms would be created along the southern edge of the project to enhance the effectiveness of the proposed vegetative screening. Temporary, green privacy screen landscape fabric would be installed on the outside of the security chain link fence on the east, west, and south sides. The landscape fabric would be removed at the end of the 5-year landscape establishment period. On the northern side, slats would be placed in the chain link fence and would permanently shield the project.

Best Management Practices (BMPs) to reduce erosion and suppress dust are proposed as part of the project and include application of a thin layer of permeable rock material of either DG or gravel over the fire access road/fuel modification zone and entrance road as well as a permeable soil-binding agent over all unvegetated areas within the module array. Inclusive of these project BMPs are construction period BMPs (e.g., fiber rolls, silt fence, etc.) required as part of the Stormwater Intake Form for new development projects.

The PV solar modules would be mounted on a rack measuring approximately 13 feet long by 13.5 feet wide to 45.5 feet long by 13.5 feet wide. The height of the proposed solar modules, as measured from the ground surface will range from eight to 11.5 feet. The minimum height of the solar modules, as measured from the ground surface is approximately four feet.

Electrical power would be routed to the proposed 12 kV pad mounted switchgear adjacent to the fire access road on the west side of the solar array. The 12 kV switchgear would be connected by underground cables to an interconnect pole located approximately 30 feet west of the parcel boundary within an existing roadway and utility easement. The existing 45-foot tall pole (#P19911) will be replaced with a 50-foot tall steel pole. A trench, approximately 60 feet long, three feet wide, and four feet deep would be required for the underground wires. The work area for the trenching would be approximately 20 feet wide and 60 feet long. Work associated with the interconnect poles have been classified as an offsite project element. All other project elements are considered onsite.

Prior to start of construction for the proposed project, all nursery operations would be removed from the parcel in accordance with the lease between SDG&E and the tenant. This includes removal of all palm trees and associated sheds from the parcel by the tenant and SDG&E. Although the majority of land surface within the solar facility is flat, portions would be cleared, grubbed, and contoured to allow for construction of internal access road, driveway, berms, and pads for switchgear, inverters, transformers, as well as the pathway along Creelman Lane. In addition, the land would be contoured to ensure continued flow of any surface water in a northerly direction, based on current conditions. Grading for the project would total approximately 2,608 CY of balanced cut and fill. A portion of the site that would not be cleared, grubbed, and contoured is an isolated water of the state. At this location, the PV solar modules would span this approximate two-foot wide isolated water and all footings would be placed outside the limits of the stream bank.

All staging of construction equipment and material would occur within the onsite portions of the project footprint.

The existing fence around the parcel would remain as-is with the exception of the fencing along Creelman Lane. Here, the existing fencing would be removed and the proposed security fence would serve as the new fence. Proposed fencing would be extended between the security fence and the existing fence at the southwestern and southeastern corners of the parcel to prevent unauthorized access into undeveloped portions of the parcel.

No offsite roadway improvements are proposed to accommodate the proposed project. Minor improvements to expand the existing driveway entrance on Creelman Lane are proposed as part of the project and are considered an onsite project element. The existing entrance is approximately 15 feet wide; it would be widened to approximately 80 feet with hammerhead turnouts to allow vehicles to turn around within the entrance, if necessary rather than vehicles backing out into Creelman Lane. The entrance would also be covered with DG.

The project design includes the construction of a maximum 10-foot wide pathway (within the existing road ROW) along Creelman Lane for the Dye Road Pathway (ID#12). The pathway would abut the parcel boundary with the exception of the southeastern corner where the pathway would be adjacent to Creelman Lane ROW to avoid moving a headwall for an existing drainage culvert under Creelman Lane. The pathway would be covered with DG. The County would be responsible for maintenance of the pathway following its construction. No fencing is required and no additional landscaping within the ROW is required. However, erosion control would be applied to areas within the ROW that are disturbed during construction of the pathway. The future Collier Park/Ashley Road Pathway (ID#13) within the Ashley Road ROW is noted on the plot plan; however, the project does not propose to construct this pathway.

The facilities would be operated and monitored remotely by SDG&E and IES. After the PV solar modules are installed, the modules would operate during daylight hours, seven days per week, and 365 days per year. Maintenance of the facilities would require occasional visual inspections and minor repairs. Minimal operational control and maintenance would be required. To allow for ongoing maintenance, the PV solar modules would also be washed with de-ionized water approximately four times per year. An operation and maintenance contractor would perform the panel cleaning with an approximate four-man crew that can wash approximately 2,000 modules per day. Washing would require approximately half a gallon per module per washing. Based on the number of modules per day and the approximate number of modules proposed for the project, cleaning of the panels (at four times per year) is expected to occur over approximately 36 days and use up to approximately 45,552 gallons of water annually. Cumulatively, the number of site visits for inspections, repairs, maintenance, etc. is anticipated to average 56 per year.

Existing fire hydrants near the southeast and southwest corners of the project site, near Creelman Lane and Ashley Road and secondarily near Creelman Lane and Casteel Lane, respectively would provide adequate water volume and pressure for future fire protection services. Water for construction would be provided by the fire hydrant at the intersection of Creelman Lane and Ashley Road. Alternatively, water for construction may be obtained from the two existing wells (#WEL16712 and #W06123) and water tank located in the northwest corner of the project site. The two existing water wells would also provide water required during the operation and maintenance of the facility, including landscape irrigation. Water from the existing wells would be pumped to the proposed 4,000 gallon water tank in the southwest corner of the project site, if needed via a combination of an existing water pipeline and a proposed waterline. Access to the existing wells and water tank would be provided by an eight-foot wide unpaved path extending northward from the double gate in the security fence. No grading would be required for this pathway. The existing well pumps will be retained and no modification of the pumps are expected to be required. Overall, the existing access to these wells is not proposed to change from the current conditions as part of this project.

Construction of the proposed project is anticipated to begin immediately upon acquisition of all applicable permits and take approximately 120 calendar days; however, construction duration would vary depending upon weather and seasonal factors and construction plan specifics developed during final design.

1.3. Survey Methodologies

1.3.1. Study Area Description

The biological study area (BSA) includes 100 feet beyond the project site (i.e., project MUP area including solar facility, entrance off Creelman Lane, landscape screening, and offsite interconnect pole) as approved by the County (2013b). The entire BSA was surveyed on foot, with the exception of those portions of the BSA that extended beyond the SDG&E parcel. Non-SDG&E owned lands were visually surveyed only from SDG&E property boundary lines or areas of public access. It should be noted that M&A evaluated a larger project area, inclusive of the BSA in 2012 and 2013 prior to determination of the project MUP area. The initial evaluation was conducted in association with an existing conditions/constraints analysis of the parcel to assist in project design (M&A 2013a). Although M&A evaluated a larger project area, the results within Section 1.4.2 Habitat Types/Vegetation Communities are textually and graphically limited to the BSA, unless otherwise stated.

1.3.2. Literature and Data Review

Historical and currently available biological literature and data pertaining to the project parcel were reviewed prior to the initiation of the field investigation. This review included examination of: 1) aerial photography for the BSA (Air Photo USA 2007, Aerials Express 2010, and Google Earth 2012); 2) regional vegetation data for the project vicinity (SanGIS 1995 and 2012); 3) geological substrates and soil types mapped on the project site (Strand 1965 and SanGIS 2002, respectively); 4) federally designated critical habitat for the project vicinity (USFWS 2013a); 5) California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (USFWS) special status species records for the project vicinity (CDFW and USFWS and 2013a and 2013b, respectively); 6) previous biological reports available to M&A, which included the Reconnaissance Level Jurisdictional Waters Assessment and Creelman Lane Vernal Pool Habitat Mitigation and Photovoltaic Development Assessment letter reports prepared by AECOM for the SDG&E Transmission Reliability Project (AECOM 2010 and 2011, respectively); and 7) examination of the list of sensitive species with a potential to occur on the property, provided in the County project scoping letter, dated August 2, 2013 (County 2013a) as modified and accepted by the County in December 2013 (M&A 2013b).

1.3.3. Surveys Conducted

1.3.3.1. Vegetation Mapping

Existing vegetation types were delineated on color aerial photographs (Aerials Express 2010) of the BSA ranging from a 1" = 125' scale to a 1" = 275' scale. A minimum mapping unit (MMU) of 0.1 acre was used for the vegetation mapping; therefore, some vegetation communities may not have been represented individually but were included as part of the larger surrounding vegetation community. If possible and determined to be biologically relevant, vegetation was mapped at a finer scale. The vegetation types were classified according to the Holland (1986) code classification system as modified by Oberbauer (2008).

Significant and sensitive resources were noted on field maps and/or recorded using a Trimble® geoexplorer Global Positioning System (GPS) unit with submeter accuracy. Data collected from the survey were digitized in Environmental Systems Research Institute (ESRI) Geographical Information System (GIS) software. Photographs of the project area were taken to record the biological resources present within the BSA.

1.3.3.2. Flora/Fauna Survey

M&A qualified biologists conducted general flora and fauna surveys and recorded detectable species in field notebooks. Plant identifications were either resolved in the field or later determined through verification of voucher specimens. Wildlife species were determined through direct observation (aided by binoculars), identification of songs, call notes and alarm calls, or by detection of sign (e.g., burrows, tracks, scat, etc.).

The scientific and common names utilized for the floral and faunal resources identified were noted according to the following nomenclature: flora, Rebman and Simpson (2006) and Baldwin (2011); butterflies, Klein and San Diego Natural History Museum (2002) and Opler et al. (2010); amphibians and reptiles, Crother et al. (2001 and 2003); birds, American Ornithologists' Union (1998 and 2012); and mammals, (species level) Wilson and Reeder (2005) and (sub-species level) Hall (1981).

1.3.3.3. Jurisdictional Wetland Delineation

M&A qualified biologists conducted a jurisdictional wetland delineation in 2012 as part of the initial biological evaluation (M&A 2013a) and subsequently conducted a wetland delineation verification in 2014 to verify the existing biological conditions based on the initial studies and if needed updated existing biological conditions. This delineation used the routine onsite determination methods noted in the U.S. Army Corps of Engineers' (USACOE) Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACOE 2008a). In addition, the delineation was expanded to provide a full

review of jurisdictional regulatory authority over wetlands and non-wetland waters of the U.S./state to define the physical boundaries of regulation by various federal, state, and local agencies.

Prior to conducting the delineation, the BSA was evaluated to identify potential jurisdictional wetlands and/or waterways, and their connection to offsite hydrological resources. In addition, the overall landforms, slopes, soils, and climatic/hydrological conditions present within the BSA were assessed.

Evidence supporting jurisdictional determinations was recorded on field data forms and depicted in photographs of the data points. Paired data points were taken in areas that were visually determined to best represent the characteristics of each potential wetland community type and/or jurisdictional resource identified within the BSA, as well as in areas where the presence of a wetland and/or jurisdictional resource was uncertain.

The USACOE routine onsite determination methods require the presence of three parameters to define an area as a wetland (e.g., hydrophytic vegetation, hydric soils, and wetland hydrology); however, procedural deviations are required and allowed for under the delineation methods where normal circumstances do not exist [i.e., some wetland indicators of one or more of the parameters can be periodically lacking due to normal seasonal or annual variations in environmental conditions (i.e., problem areas) or effects of recent human activities or natural events (i.e., atypical situations)]. At each data point location, the area was first assessed to determine if normal environmental conditions were present. Each data point was then evaluated for indicators of each of the wetland parameters (as described below).

Wetland habitats and jurisdictional waterways were delineated using a Trimble® geoexplorer GPS unit with submeter accuracy and plotted on color aerial photographs (Aerials Express 2010) of the BSA ranging from a 1" = 125' scale to a 1" = 275' scale for the various sites. Jurisdictional waterway widths were noted by either: 1) by taking the average of three width locations along the waterway (i.e., upstream terminus, mid-stream, downstream terminus) if waterway widths varied by less than five feet; or 2) by reporting multiple widths if waterway widths varied by more than five feet. When available, topographical data reviewed to assist in delineating waterways widths.

Information on the overall delineation process and regulatory jurisdictions may be found in the USACOE Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACOE 2008a), as well as federal, state, and local enacting legislation, or through guidance provided by judicial interpretation, solicitors opinions, and regulatory guidance issued to jurisdictional agencies.

1.3.3.3.1. Wetland Parameters

Hydrophytic Vegetation

Hydrophytic vegetation is defined as "the community of macrophytes that occurs in areas where inundation and soil saturation is either permanent, or of sufficient frequency and duration to exert a

controlling influence on the plant species present" (USACOE 2008a, Section 2). For the purposes of this delineation, five levels of wetland indicator status were used to assess the presence of hydrophytic vegetation, based on the most current National Lists of Plant Species that Occur in Wetlands (USACOE 2012): species classified as 1) obligate wetland plants (OBL) [plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands]; 2) facultative wetland plants (FACW) [plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands]; 3) facultative plants (FAC) [plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands]; 4) facultative upland plants (FACU) [plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands]; and 5) obligate upland plants [plants that occur rarely (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions] (Environmental Laboratory 1987, Table 1). Hydrophytic vegetation was determined to be present if any one of the following three indicator tests were satisfied: 1) the Dominance Test (Indicator 1), where "more than 50% of the dominant plant species across all strata were rated OBL, FACW, or FAC"; 2) the Prevalence Test (Indicator 2), where there were indicators of hydric soils and wetland hydrology, and the prevalence index was 3.0 or less, which is a weighted-average wetland indicator status of all plant species by abundance (percent cover); and/or 3) the Plant Morphological Adaptations Test (Indicator 3), where there were indicators of hydric soils and wetland hydrology present, and either the Dominance Test (Indicator 1) or Prevalence Test (Indicator 2) were satisfied after reconsideration of the indicator status of certain plant species that exhibited morphological adaptations for life in wetlands.

Hydric Soils

Hydric soils are defined as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USACOE 2008a, Section 3). For the purposes of this delineation, the hydric soil indicators described in the Corps Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACOE 2008a) and National Technical Committee for Hydric Soils (NTCHS) Field Indicators of Hydric Soils in the United States (USDA NRCS 2006) were used to assess the presence of hydric soils. Soil test pits were dug to the depth needed to document the soil chroma index using the Munsell® Soil Color Charts (Munsell® Color 2000), as well as additional hydric soil indicators. The soil was determined to be hydric if one or more hydric soil indicators were present.

Wetland Hydrology

Wetland hydrology is indicated by the presence of surficial or sub-surficial hydrologic characteristics long enough during the growing season to show that the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and reducing conditions,

respectively; thus, for an area to be defined as a wetland, periodic inundation or saturation of soils during the growing season must be determined to be present (USACOE 2008a, Section 4). The growing season is defined "as the portion of the year when soil temperature (measured 20 inches below the surface) is above biological zero [5 °Celsius (C) or 41 °Fahrenheit (F)] … [and] this period can be approximated by the number of frost-free days." For the purposes of this delineation, the estimated starting and ending dates for the growing season on the project site were determined by reviewing the median dates (i.e., frequency of 5 years in 10) of 28 °F (-2.2 °C) air temperatures in the spring and fall, based on long-term records gathered at the nearest National Weather Service meteorological station (USDA NRCS 2002), as well as by onsite indicators of biological activity. The wetland hydrology indicators described in the Corps Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACOE 2008a) were used to assess the presence of wetland hydrology. Wetland hydrology was determined to be present if one or more primary indicators, or two or more secondary indicators were observed.

1.3.3.3.2. Jurisdiction of Wetlands and Waterways

U.S. Army Corps of Engineers

The USACOE has regulatory authority to issue permits for 1) the discharge of dredged or fill material in "waters of the U.S." under section 404 of the CWA (33 U.S.C. 1344), and 2) work and placement of structures in "navigable waters of the U.S." under sections 9 and 10 of the Rivers and Harbors Act (RHA) (33 U.S.C. 401).

The term "navigable waters of the U.S." is defined in 33 CFR Part 329.4 as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce."

The term "waters of the U.S." is defined in 33 CFR Part 328.3(a) as:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide; (2) All interstate waters and wetlands; (3) All other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition; (5) Tributaries of waters identified in (a) (1) through (4) of this section; (6) The territorial seas; (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section; and (8) Waters of the U.S. do not include prior converted cropland.

"Wetlands" are 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." Thus, all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to classify an area as a Corps jurisdictional wetland under normal circumstances.

The limits of jurisdiction in non-tidal waters of the U.S. [33 CFR 328.4(c)] extend to the limits of the wetlands or adjacent wetlands. Non-tidal waters of the U.S. that lack one or two of the wetland parameters may still be jurisdictional under the USACOE as non-wetland waters of the U.S. In the absence of wetlands or adjacent wetlands, the limits of jurisdiction in non-tidal waters of the U.S. extend to the ordinary high water mark (OHWM), which is defined in 33 CFR 328.3(e) as, "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

The regulatory purview of the USACOE under Section 404 of the CWA has been restricted in recent years by rulings of the U.S. Supreme Court. These have included principal rulings under Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers et al. (2001) and the 2006 ruling in Rapanos v. U.S. and Carabell v. U.S. (hereafter referred to as Rapanos). Under the 2006 court ruling in Rapanos addressing the jurisdictional scope of "waters of the U.S.", no single opinion commanding a majority of the Court was issued. As a consequence, the U.S. Environmental Protection Agency (USEPA) and USACOE subsequently issued a joint memorandum addressing guidance on determining jurisdiction of "waters of the U.S."

The memorandum, intended to address rulings in SWANCC and Rapanos, states that the agencies will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and

- Wetlands adjacent to, but that do not directly abut a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in, and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waterways (TNWs); and
- Significant nexus includes consideration of hydrologic and ecologic factors.

Key to the application of this guidance is a formalized oversight process involving both the USACOE and the USEPA in the adoption of an Approved Jurisdictional Determination (AJD). The intent of this formal process is to ensure consistency in the manner in which the agencies interpret the rulings and guidance at all levels. To institute the program by which jurisdictional determinations are made, the USACOE issued RGL 08-02 on the subject of Jurisdictional Determinations (USACOE 2008b). Of importance in this guidance is the distinction between an applicant's request for a Preliminary Jurisdictional Determination (PJD) or an AJD. If a PJD is requested from the USACOE, the determination will be inclusive of all features that have historically been regulated by the USACOE under Section 404 of the CWA and Sections 9 and 10 of the Rivers and Harbors Act (i.e., pre-SWANCC and Rapanos). The PJD excludes exempted jurisdictional waters, but not those excluded by court ruling interpretations. The AJD provides a more thorough evaluation of issues of isolation, adjacency, and significant nexus as contemplated by the courts and excludes those areas from USACOE regulation that fail to meet the necessary litmus tests of the court decision and the agencies' implementation guidance. The USACOE has developed a Jurisdictional Determination Form Instructional Guidebook (EPA and USACOE 2007) to aid field staff in completing AJDs.

California State Water Resources Control Board/Regional Water Quality Control Board

The Regional Water Quality Control Board(s) (RWQCB) [under the State Water Resources Control Board (SWRCB)] regulates wastewater discharges to "waters of the State", which is defined in section 13050(e) of the California Water Code as "any surface water or groundwater, including saline waters, within the boundaries of the State." For waters of the State that are federally regulated under the Clean Water Act (CWA), the RWQCB must provide state water quality certification pursuant to section 401 of the CWA for activities that may result in discharge of pollutants into waters of the U.S; where no federal jurisdiction exists over waters of the State, the RWQCB retains regulatory authority under provisions of the Porter-Cologne Water Quality Control Act to protect water quality through issuance of waste discharge requirements.

California Department of Fish and Wildlife

Under section 1602 of the California Fish and Game Code (FGC), the CDFW has regulatory authority over any proposed activity that may "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

The CDFW regulates alterations of lakes or streambeds that may "substantially adversely affect fish and wildlife resources" through the development of a Streambed Alteration Agreement (SAA) under the Lake and Streambed Alteration (LSA) Program. Unlike the USACOE process, the SAA is not a discretionary permit, but rather an Agreement developed between an applicant and the CDFW. This Agreement may include conditions of mitigation, impact reduction, or avoidance measures. These measures are subject to acceptance by the applicant or may be countered with alternative measures. If an Agreement cannot be reached between the CDFW and applicant, an arbitration process exists.

Under the LSA Program, FGC section 1602 applies to "all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state." CDFW jurisdiction differs from the USACOE in that a "streambed" is not limited to the OHWM, but rather generally encompasses the entire width of the streambed, from bank to bank, regardless of the water level. CDFW regulatory authority extends not only to the bed and bank of streams or lakes, but also to "adjacent riparian habitats" that are supported by a river, stream, or lake, regardless of the riparian area's federal wetland status. For practical purposes of defining "adjacent riparian habitats," these habitats include the extent of the canopy for stream-associated vegetation that is rooted within, and dependent on the jurisdictional streambeds, as well as all adjacent hydrophytic vegetation. In some instances, small disjunctions between the stream course and adjacent riparian stands may occur where prior disturbance has occurred to fragment the riparian corridor. Adjacent riparian habitat does not include isolated trees or groves, or other wetland vegetation types in absence of proximate streambeds or lakes; and section 1602 does not extend to isolated wetlands and waters such as small ponds not located on a drainage, wet meadows, vernal pools, or tenajas.

County of San Diego

The County regulates development that may affect Environmentally Sensitive Lands (ESL) under the Resource Protection Ordinance (RPO) (2007). Under the RPO, the County has defined an RPO jurisdictional "wetland" as follows:

1. Lands having one or more of the following attributes are "wetlands":

   (aa) At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);

   (bb) The substratum is predominantly undrained hydric soil; or

(cc) An ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

2. Notwithstanding paragraph (1) above, the following shall not be considered "wetlands":

(aa) Lands which have attribute(s) specified in paragraph (1) solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that the Director of Planning and Development Services determines that they:

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

(ii) Are small and geographically isolated from other wetland systems;

(iii) Are not vernal pools; and,

(iv) Do not have substantial or locally important populations of wetland dependent sensitive species.

(bb) Lands that have been degraded by past legal land disturbance activities, to the point that they meet the following criteria as determined by the Director of Planning and Development Services:

(i) Have negligible biological function or value as wetlands even if restored to the extent feasible; and,

(ii) Do not have substantial or locally important populations of wetland dependent sensitive species.

A "non-soil" substrate includes, but is not limited to, rock outcroppings, deepwater habitats (generally greater than 6.6 feet in depth), cobble rock, bedrock or scoured channels.

The above definition of wetlands is based on the same basic attributes (hydrophytic vegetation, hydric soils, and hydrology) as those of the CDFW and the USACOE, although those agencies have definitions with slightly different language and requirements.

1.3.3.4. Directed Special Status Species Survey/Assessment

M&A biologists conducted directed surveys/assessments for special status species in 2012 as part of the initial biological evaluation (M&A 2013a) and subsequently in 2014 to verify the existing biological conditions based on the initial studies. The species list considered in the assessment was based on those special status species, as defined under CEQA, the County Guidelines for Determining Significance [for] Biological Resources (County 2010b), with the presence of potentially suitable habitat in the BSA, as well as those provided in the County project scoping letter, dated August 2, 2013 as modified and accepted by the County in December 2013 (M&A 2013b).

The County Report entitled Guidelines for Determining Significance [for] Biological Resources (County 2010b) define "sensitive species" as "those species that are included on generally accepted and documented lists of plants and animals of endangered, threatened, candidate or of special concern by the Federal Government or State of California; MSCP Rare, Narrow Endemic Animal Species, Narrow Endemic Plant Species, and County Sensitive Plant and Animal Species; and those

species that meet the definition of 'Rare or Endangered Species' under §15380 of the State CEQA Guidelines."

State CEQA Guidelines §15380 (Title 14, Chapter 3, Article 20) define "endangered, rare or threatened species" as "species or subspecies of animal or plant or variety of plant" listed under the Code of Federal Regulations, Title 50, Part 17.11 or 17.12 (Volume 1, Chapter I) or California Code of Regulations, Title 14, Sections 670.2 or 670.5 (Division 1, Subdivision 3, Chapter 3), or a species not included in the above listings but that can be shown to be "endangered" meaning "when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors" or "rare" meaning "although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the Federal Endangered Species Act". State CEQA guidelines Appendix G, Section IV generally refers to species that fall under the above criteria as "special status species".

Thus, for the purposes of this report, special status species are: 1) federally and state listed species (CDFW 2013b and 2014b); 2) CDFW Species of Special Concern, Fully Protected, and Watch List species (CDFW 2011 and 2014a); 3) species designated as Special Plants or Special Animals in the CNDDB, which include all taxa inventoried by the CDFW, regardless of their legal or protection status; 4) County MSCP Narrow Endemic and Covered Species (County 2010b); and 5) species designated as sensitive by the County (County 2010b).

The location of identified special status species were recorded using a Trimble® geoexplorer GPS unit or noted on color aerial photographs (Aerials Express 2010) of the BSA ranging from a 1" = 125' scale to a 1" = 275' scale depending upon the site.

The potential for special status species to occur within the BSA, but not identified during the surveys, was assessed based on the presence of potentially suitable habitat, as well as historical and currently available species data. The potential for species presence was classified as follows:

- Not Expected: species not previously reported within two miles of the BSA and the diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the BSA;
- Low Potential: species previously reported within two miles of the BSA but with limited potentially suitable habitat;
- Moderate Potential: species previously reported within two miles of the BSA but with only moderate quality, potentially suitable habitat due to habitat disturbance, fragmentation, or isolation; and
- High Potential: species previously reported within two miles of the BSA with large areas of contiguous, high quality, potentially suitable habitat present.

The following sections discuss the methodology for those focused/protocol surveys assessed as being necessary to determine the current presence/absence of rare plants and/or listed species within the BSA based on the presence of potentially suitable habitat.

1.3.3.4.1. Focused Ephemeral Pool Habitat Survey/Assessment

M&A biologists conducted directed habitat surveys/assessments for vernal/ephemeral pools in 2012 and 2013 as part of the initial biological evaluation to assist in project design (M&A 2013a) and subsequently in 2014 to verify the existing biological conditions based on the initial studies. The surveys focused on those areas identified as potential vernal/ephemeral pool habitat by AECOM and graphically presented in the Reconnaissance Level Jurisdictional Waters Assessment and Creelman Lane Vernal Pool Habitat Mitigation and Photovoltaic Development Assessment (AECOM 2010 and 2011, respectively). M&A biologists searched for depressions in areas consisting of micro-topography that could potentially support seasonal pools during periods of sufficient precipitation. The depressions were carefully examined for the presence of any dried floral and faunal remnants showing signs of seasonal inundation.

1.3.3.4.2. Quino Checkerspot Butterfly Site Habitat Assessment

M&A biologists conducted a directed habitat survey/assessment in the spring of 2012 to determine if the site contains potentially suitable habitat areas for the federally listed endangered quino checkerspot butterfly (*Euphydryas editha quino*); and if applicable, to map recommended butterfly survey areas.

1.3.4. Survey Dates, Times, and Conditions

Table 1 summarizes the survey dates, times, and conditions.

Table 1. Survey Dates, Times, Conditions

Survey	Date[1]	Time	Conditions[2] (start to end)	Biologists[3]
Field Inspection with IES	2012 Mar 1	0740-1400	---	AKG
BS/WD VP-A/QCB-SA	2012 Apr 27	0730 - 1330	Weather: 100-0% cc Wind: 1-1 BS Temperature: 56-64° F	AKG GMK[4]
BS/WD	2012 May 11	1200 - 1415	Weather: 0-0% cc Wind: 3-3 BS Temperature: 68-73° F	AKG
VP-A	2013 Mar 14	0840-0915	Weather: 0% cc Wind: 0 BS Temperature: 66° F	KLI[4] ATG

Survey	Date[1]	Time	Conditions[2] (start to end)	Biologists[3]
BS/WD-V VP-A	2014 Feb 4	0750-1015	Weather: 50-75% cc Wind: 0-1 BS Temperature: 45-50° F	AKG KLI[4]

1 Survey Type: BS = general biological survey; WD = jurisdictional wetland delineation; WD-V = jurisdictional wetland delineation verification; QCB-SA = quino checkerspot butterfly site assessment; VP-A = vernal pool assessment.

2 Conditions: % cc = percent cloud cover; BS = Beaufort Scale; ° F = degrees Fahrenheit.

3 Biologist(s): AKG = Amanda K. Gonzales; GMK = Gina M. Krantz; ATG = Antonette T. Gutierrez; KLI = Kyle L. Ince.

4 Although protocol surveys for the quino checkerspot butterfly or federally listed branchiopods were not performed as part of this project, the assessments were performed by Gina M. Krantz and Kyle L. Ince who are authorized to survey for both fauna types under CDFG MOU and/or USFWS 10(a)(1)(A) Permit Number 797999.

1.3.5. Survey Limitations

Biological inventories are generally subject to various survey limitations. Depending on the season and time of day during which field surveys are conducted, some species may not be detected due to temporal species variability in presence or detectability.

Multiple daytime field surveys of the BSA were conducted over three spring seasons when annual plants, invertebrates, amphibians, reptiles, and migratory or nesting birds are more easily detected. While documentation of some species may have been limited due to lower than average rainfall, biological literature and data reviews were performed to assess presence and/or potential presence of habitats and species within the BSA. Based on the biological literature and data review performed, as well as knowledge of species-specific habitat requirements, it is anticipated that any additional species potentially present on the project site can be fairly accurately predicted, and that the surveys conducted were sufficient in obtaining a thorough review of the biological resources present within the BSA.

1.4. Environmental Setting (Existing Biological Conditions)

The BSA is located within a semi-rural residential/agricultural community, southeast of the Ramona Village Center (see Figure 3). Much of the BSA is comprised of the project parcel, which is owned by SDG&E. All other parcels within the BSA are privately owned residential/agricultural lots. Currently, the southern, western, and eastern portions of the SDG&E parcel are leased by a private company for use as an active palm tree nursery. The primary crop are non-native palms consisting of Canary Island palm harvested in the ground along the southern, western, and eastern perimeters of the parcel and queen palm in container pots in the interior portion of the site. The remaining land within the parcel is undeveloped and supports dense non-native grassland with drainage features meandering in a northwesterly direction. Overall, the BSA is bound by semi-rural residential

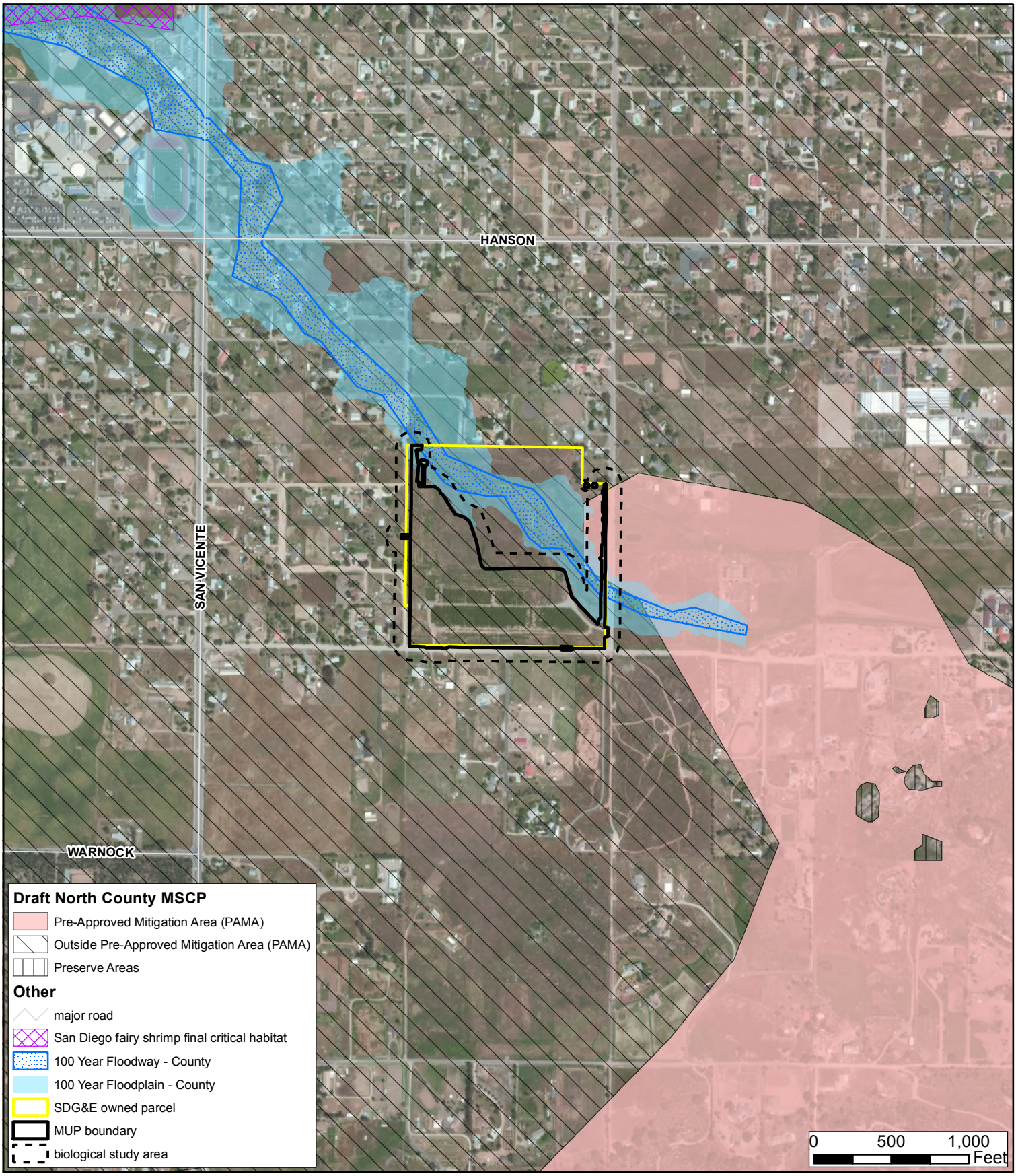
development in which the density of lots is greater to the north and west. Habitat types within the adjacent residential/agricultural lots include non-native grassland, mature eucalyptus woodland, disturbed habitat, and urban/development. East of Ashley Road are large parcels comprised of open non-native grassland fields as well as one small stock pond lined with plants typical of coastal and valley freshwater marsh. Based on aerial review and ground conditions, water levels within the pond fluctuate and as a result the pond could be classified as an extension of the surrounding grassland. South of Creelman Lane are spaced lots located on a large hilltop that overlook the project site, some of which have small equestrian facilities.

The site has a shallow, northwest sloping landform with an approximate elevation of 1,460-1,476 feet above mean sea level (MSL). The underlying geology of the area is mapped as Alluvium (Strand 1965). The soils are relatively diverse, with most of the site mapped as Clayey alluvial land (SANGIS 2002). Within this soil type are meandering drainage features. From northeast to southwest, the soils within the project MUP area are mapped as clayey alluvial land, Placentia sandy loam (2 to 9 percent slopes), Vista coarse sandy loam (5 to 9 percent slopes), and Fallbrook sandy loam (5 to 9 percent slopes). Additional soils present within the BSA (but outside the project MUP site) are Bonsall-Fallbrook sandy loams (2 to 5 percent slopes) in the southwest and a small pocket of Placentia sandy loam, thick surface (0 to 2 percent slopes) in the northwest portion of the BSA.

1.4.1. Regional Context

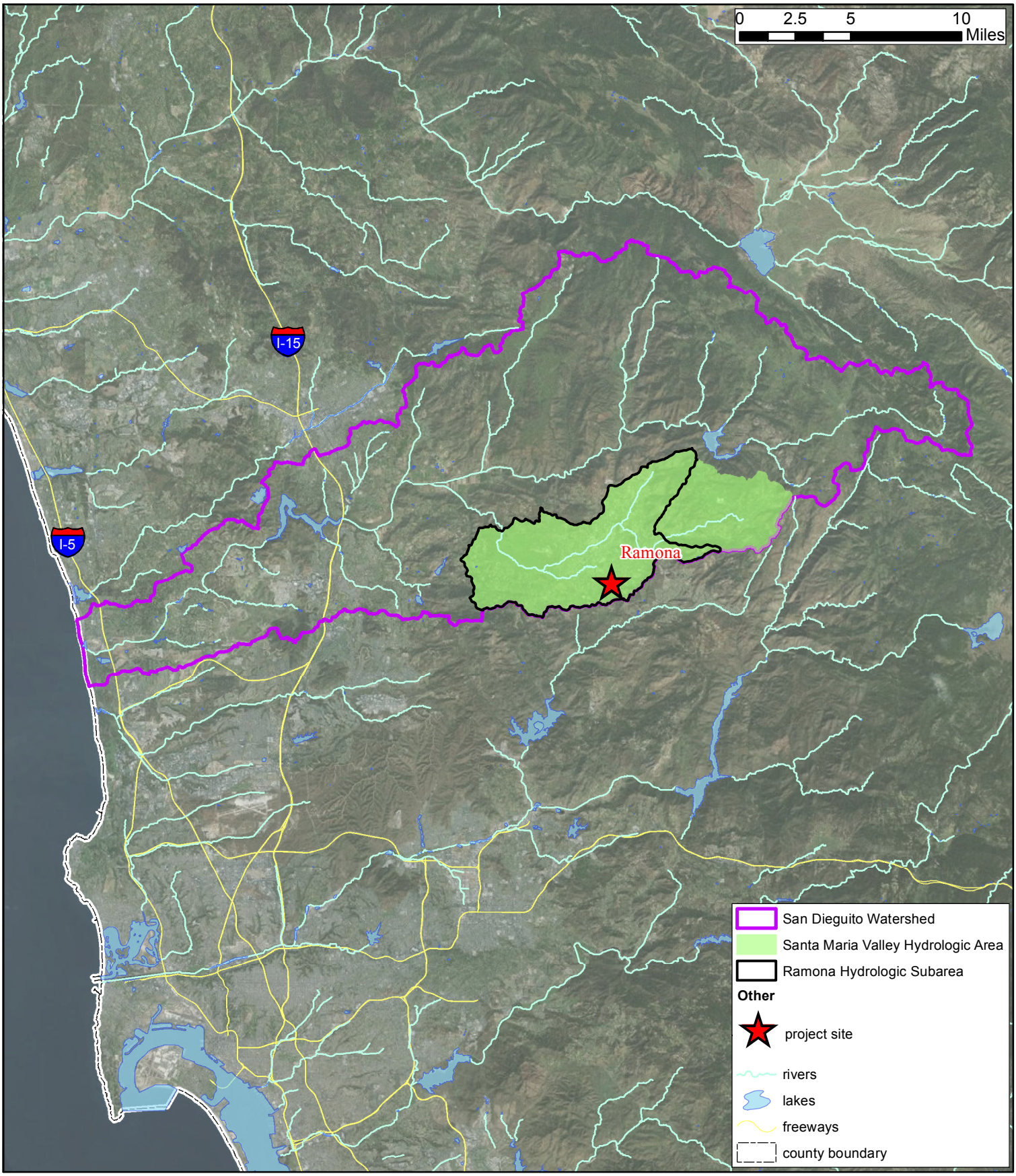
The northeastern portion of the BSA lies within the Eastern Ramona Core Planning Unit (Core 15) of a Pre-Approved Mitigation Area (PAMA) as identified within the draft North County MSCP Subarea Plan (County 2009) (Figure 4). The BSA is located just outside (i.e., west) of Survey Area 2 of the USFWS recommended survey area for the quino checkerspot butterfly (USFWS 2005 and 2013c pers. comm.).

Hydrologically, the BSA lies within the Ramona Hydrologic Subarea (Basin No. 5.41), which is located within the Santa Maria Valley Hydrologic Area (Basin No. 5.40) of the San Dieguito Unit/Watershed (Basin No. 5.00) (Figure 5). Three drainage features are located onsite and are expected to ultimately drain into the Santa Maria Creek approximately four miles northwest of the BSA via culverts through the adjacent rural development. From north to south the drainages are identified within this report as: Drainage 1; Drainage 2 (Ramona South Creek); and Drainage 3, which is comprised of an isolated water of the state and a swale. Regionally, the Santa Maria Creek and its tributaries drain about 57 square miles from the mountains east of Ramona through the steep and narrow walls of Bandy Canyon to its confluence with Santa Ysabel Creek. Below the confluence, the San Dieguito River flows through the San Pasqual Valley into Lake Hodges and ultimately drains into the Pacific Ocean via San Elijo Lagoon.



Environmental Settings Map -
Local and Regional Conservation Overlays
IES/SDG&E Solar Energy Project – Ramona
(County Record ID PDS2014-MUP-14-013)
Aerial Source: Microsoft 2012

Figure 4



N
W E
S

Regional Watershed Map

IES/SDG&E Solar Energy Project – Ramona
(County Record ID PDS2014-MUP-14-013)

Aerial Source: Microsoft 2012

Figure 5

The BSA is bisected in a southeast to northwest direction by Drainage 2, also known as Ramona South Creek. The creek has County floodway and 100-year floodplain designations associated with it. However, the creek does not have Federal Emergency Management Agency floodway or floodplain designations associated with it.

1.4.2. Habitat Types/Vegetation Communities

Five vegetation types were identified on the project MUP area during the biological surveys (Table 2; Figure 6).

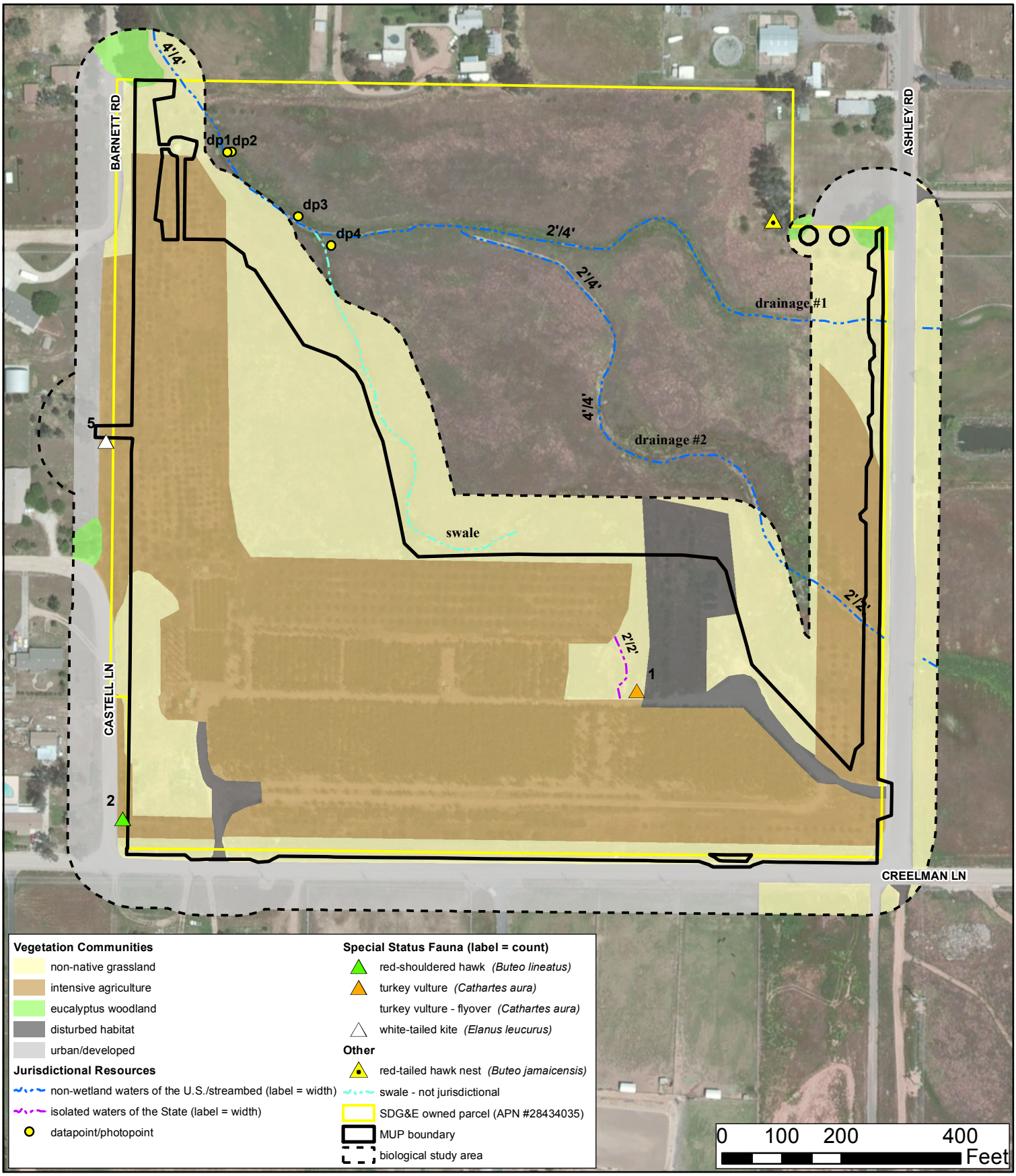
Table 2. Existing Vegetation Types on the Project Site

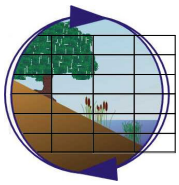
Vegetation Type	Holland/Oberbauer Code	Habitat Type	Existing Acreage	
			Onsite	Offsite
Non-native grassland	42200	Upland	4.8	0.3
Intensive agriculture	18200	Upland	12.1	<0.1
Eucalyptus woodland	79100	Upland	<0.1	0.0
Disturbed habitat	11300	Upland	1.1	0.0
Urban/developed	12000	Upland	<0.1	<0.1
		Total:	**18.0**	**0.3**

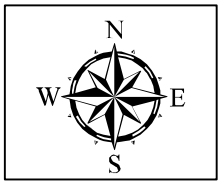
1.4.2.1. Non-native Grassland

Non-native grassland has been mapped for those areas comprised of a dense to sparse cover (at least 50 percent coverage) of annual grasses. Within the project site, non-native grassland is primarily found throughout the northern portion of the site as well as areas not designated as active, intensive agriculture. Overall, the non-native grassland community creates an approximate two-foot tall (height varies depending on rainfall and season), dense vegetative cover dominated by non-native species including Italian ryegrass (*Festuca perennis*), hare barley (*Hordeum murinum* ssp. *leporinum*), slender wild oat (*Avena barbata*) and soft chess (*Bromus hordeaceus*), with inclusions of non-native and weedy native species including California burclover (*Medicago polymorpha*), *Erodium* species, mustard species, thistle species, curly dock (*Rumex crispus*), rancher's fiddleneck (*Amsinckia menziesii* var. *intermedia*), and henbit (*Lamium amplexicaule*).

Beyond the limits of the project site, within the swale are small pockets of lower, herbaceous ground cover with varying densities of non-native annual grasses. Within these areas, California loosestrife (*Lythrum californicum*), a native perennial herb, annual beard grass (*Polypogon monspeliensis*), and Italian ryegrass were noted in addition hare barley and long-beak filaree (*Erodium botrys*). In addition, within Drainage 2 is an area dominated by both Italian ryegrass and hare barley. While these areas support a slightly different composition of plant species, non-native grasses are dominant and they function as an extension of the surrounding non-native grassland.







Biological Resources Map

IES/SDG&E Solar Energy Project - Ramona
(County Record ID: PDS2014-MUP-14-013)

Aerial Source: Microsoft 2012

Figure 6

Regionally, the non-native grassland is located within an area of semi-rural and agricultural development. Locally, the non-native grassland is contiguous with grassland habitat to the east of the BSA; however, the onsite community serves as the western terminus prior to transitioning into dense, rural development.

Overall, the non-native grassland is expected to function as breeding, dispersal, and foraging grounds predominantly for common avian and small mammals and/or rodents. The non-native grassland is not considered to be RPO Sensitive Habitat Lands since the lands do not support unique vegetation communities or the habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the State CEQA Guidelines (14 Cal. Admin. Code Section 15000 et seq.), including the area which is necessary to support a viable population of any of the above species in perpetuity, or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

1.4.2.2. Intensive Agriculture

Intensive agriculture has been mapped for those lands within which active palm tree nursery operations occur. The primary crops within the nursery are non-native palms consisting of Canary Island palm and queen palms. The Canary Island palms are rooted in the ground and currently line the western, southern, and eastern portions of the parcel boundary while the queen palms are in container pots in the interior portion of the site. Harvesting plants in the ground is expected to be a routine practice in nursery operations, if feasible. This allows the plants to mature quickly, thereby providing consumers with a wide variety of plants to choose from.

Regionally, the intensive agriculture is located within an area of semi-rural and agricultural development. Locally, this particular agricultural use is isolated within an area that is dominated by non-native grassland and semi-rural development. Due to the artificial nature of this community, it is expected to primarily serve as dispersal ground for common species with minimal foraging opportunities. The intensive agriculture is not considered to be RPO Sensitive Habitat Lands.

1.4.2.3. Eucalyptus Woodland

Mature canopies of eucalyptus woodland are found in the northern portions of the site. The community is dominated by eucalyptus (*Eucalyptus* sp.) and has minimal understory coverage. The eucalyptus woodland is directly associated with the adjacent rural urban development and it is the canopy coverage that over hangs the project site.

Regionally, the eucalyptus woodland serves as an extension/buffer of tree canopy between semi-rural development and/or undeveloped areas. Locally, the habitat could serve as breeding, dispersal, and foraging habitat for common avian and urban tolerant species. The eucalyptus woodland is not considered to be RPO Sensitive Habitat Lands.

1.4.2.4. Disturbed Habitat

Disturbed habitat has been mapped for those areas throughout the BSA that are either 1) devoid or support minimal vegetation as a result of previously authorized activities or 2) not paved but used for urban purposes (e.g., dirt access roads).

Regionally, the disturbed habitat is associated with the semi-rural development. Locally, the disturbed habitat is associated with dirt access roads. The biological value of this community is limited to use of the site as dispersal grounds for common fauna species. The disturbed habitat is not considered to be RPO Sensitive Habitat Lands.

1.4.2.5. Urban/developed

Urban development has been mapped for portions of Ashley Road, Creelman Lane, and residential development. Locally, the urban development is associated with paved or dirt roadways. The biological value of this community is limited to use of the site as dispersal grounds for common fauna species. The urban development is not considered to be RPO Sensitive Habitat Lands.

1.4.2.6. Unique Habitat Types and/or Physical Features

The project site does not provide any unique biological functions in terms of foraging, roosting, or large rock outcrops nor does the site support hardpan and claypan vernal pools. Below are the results of the focused ephemeral pool habitat survey/assessment.

Focused Ephemeral Pool Habitat Survey/Assessment

M&A located depressions throughout the project parcel during the biological surveys previously identified as vernal pools by AECOM on behalf of SDG&E in association with the Ramona Transmission Reliability Project. The results of the previous investigations are documented within the Reconnaissance Level Jurisdictional Waters Assessment and Creelman Lane Vernal Pool Habitat Mitigation and Photovoltaic Development Assessment letter reports (AECOM 2010 and 2011, respectively). Per the 2010 and 2011 letter reports, AECOM biologists evaluated the project parcel in addition to other sites associated with the transmission project in October 2010 and March 2011. The purpose of the surveys was to assess the potential presence of jurisdictional wetlands and vernal pools with the intent of identifying sensitive resources during SDG&E related project activities, as well as identify potential native habitat restoration sites and PV development sites. During the 2010 and 2011 surveys, ponded areas were observed and surveyed for presence of species commonly found in vernal pools. AECOM compiled a list of floral and faunal species observed within the ponded areas; this list is Table 1 within the 2010 letter report. A total of ten different species (nine plants and one animal) were detected onsite. Three of the plant species (as identified to species) are listed as "Plants that in Coastal San Diego County Occur Primarily in Vernal Pools" (Bauder 1993). They are toad rush (*Juncus bufonius*) (FACW), California loosestrife (OBL), and prairie plantain

(*Plantago elongata*; previously known as *P. bigelovii*) (FACW). Toad rush and California loosestrife were found in most of the pools while prairie plantain was limited to Pool #6. The only animal species detected within the pooled areas was an unknown species of seed shrimp (Ostracod) species. None of the plants or animals identified to species are indicator species for vernal pools as listed on the USACOEs Indicator Species for Vernal Pools (1997). In addition, none of the plant or animal species are listed as vernal pool obligate species (i.e., species restricted to vernal pools) per the draft North County MSCP Subarea Plan; rather, toad rush, California loosestrife, and prairie plantain are considered vernal pool associate species (i.e., species often found in vernal pools but also occurring in other wetland habitats) (County 2009; Table 7.3). The draft North County MSCP Subarea Plan vernal pool list is based on various sources including Bauder 1993.

A conference call was held on May 22, 2013 between M&A biologists, AECOM biologists, and SDG&E project staff members to review the methodology used by AECOM to classify areas as vernal pools (AECOM 2013 pers. comm.). Based on verbal communication, AECOM in coordination with SDG&E had previously utilized a conservative approach to classify vernal pools where SDG&E could potentially impact the resource. Any potential evidence of ponding and/or presence for vernal pools (e.g., appropriate location, soils, hydrology, or species) was a reason to classify an area as a vernal pool. This approach is expected to have identified an abundance of areas that were classified as vernal pools such that SDG&E either avoided the resource and/or conducted further in-depth evaluations to refine the assessment.

M&A biologists conducted focused assessments of these depressions in 2012, 2013, and 2014. Based on the focused assessments, in addition to the methods and results of the 2010 and 2011 AECOM surveys, M&A has determined that the depressions are low-lying areas that function as an extension of the non-native grassland and are not unique habitat types per the County RPO (2007). The below paragraphs provide a detail analysis of M&A's evaluation.

All pools (as identified previously by AECOM) and any other potential depressions found on the project site were assessed. Any open areas and/or depressions that exhibited evidence of pooling, such as saturated soils, cracked soils, and/or algae mats, were identified to delineate the boundaries of the depressions. Pool #s 1, 2, 3, 4, 5, 6, 7, 12, and 13 are located within areas associated with the palm tree nursery operations including between palm trees, along dirt access roads, turn around points, and/or staging areas. Their size ranges from approximately five square feet (sq. ft.) (i.e., road rut) to 1,600 sq. ft. (low lying area in Drainage 2). Pools #s 8, 9, 10, and 11 are in areas generally located outside the limits of the palm tree nursery within the swale. The average area is approximately 20 sq. ft. Overall, the floral composition of the previously identified pools was dominated by a combination of non-native forbs and grasses including filaree (*Erodium botrys* and *E. moschatum*) (UPL), common pineapple-weed (*Matricaria matricarioides*) (UPL), slender wild oat (UPL), hare barley (UPL), Italian ryegrass (FAC), and Boccone's sand-spurry (*Spergularia bocconii*) (UPL). However, these pools also included plants typically found in wetland areas including California loosestrife, toad rush, annual beard grass, and curly dock (all FACW). While these areas

support a slightly different composition of plant species than the surrounding non-native grassland, they were not dominated by hydrophytic plants (i.e., greater than 50 percent of FAC, FACW, and/or OBL species) and are expected to function as an extension of the surrounding non-native grassland. Thus, the areas surveyed have been classified as non-native grassland.

Field visits were performed by M&A biologists on March 1, 2012 (field inspection only), April 27, 2012, May 11, 2012, March 14, 2013, and February 4, 2014. Between February and May 2012, the total precipitation amounted to 6.27 inches, with most of the rainfall occurring in March and April at 2.42 and 2.41 inches, respectively (National Weather Service 2013). Rainfall departure from normal totaled 1.9 inches during this time. Between February and May 2013, the total precipitation amounted to 2.9 inches, with most of the rainfall occurring in February and March at 0.96 and 1.41 inches, respectively (National Weather Service 2013). Rainfall departure from normal totaled 5.33 inches during this time. While precipitation amounts were less than normal during M&A's survey years, rain events did occur either the day of, or prior to field visits and ponded water was observed in other locations throughout the parcel. However, it was limited to deep scour pockets within the main drainage channel and Pool #s 4 and 5. Based on down/damaged fence along Ashley Road as well as scour pockets and exposed gravel/rock within the drainages, the velocity of runoff though the parcel is expected to be high. In addition, outside of the main high-flow velocity channels, ponded water was limited to two pools (i.e., Pool #s 4 and 5). These two pools were evaluated for floral and faunal species (in addition to all other pools) and no indicator species for vernal pools as listed by the USACOEs Indicator Species for Vernal Pools (1997) or vernal pool obligate species per the draft North County MSCP Subarea Plan were detected onsite.

No Brachiopod species were observed in areas that supported water during any of the surveys performed by M&A; however, Pacific treefrog tadpoles were observed in ponded areas within the northwestern corner of the SDG&E parcel (Ramona South Creek) and western toad eggs were observed within Pool #5. Overall, no indicator species for vernal pools as listed on the USACOEs Indicator Species for Vernal Pools (1997) were found onsite during the surveys performed by M&A. In addition, none of the plant or animal species detected onsite is listed as vernal pool obligate species per the draft North County MSCP Subarea Plan.

Vernal pools are found only where there is a seasonally perched water table and water stands long enough to exclude or inhibit growth of the surrounding non-pool vegetation species (Zedler 1987). These conditions exist where there are depressions in soils overlying an impervious substrate, which inhibits downward percolation. Vernal pools fill from precipitation during periods when the rate of water input exceeds the rate of water loss, primarily from evapotranspiration. Seasonally, the dry soil in vernal pools becomes wet and starts to saturate during the fall and early winter. The second stage in a typical vernal pool cycle is characterized by peak rainfall and inundation of the vernal pools (USFWS 1996). Vernal pools may remain inundated until spring or early summer, sometimes filling and emptying numerous times during the wet season.

In Ramona, vernal pools are typically found within a series of microdepressions (i.e., vernal pools) but can also arise as a drainage pattern that flows during high rainfall and forms distinct ponded areas (i.e., vernal swales) that contain vernal pool plant and animal species, collectively referred to as vernal pools (TAIC 2005). The important soil requirement is either a subsoil of hardpan or claypan, which prevents the draining of water from the pools through downward percolation. Normally, water is retained for at least ten days after significant rain events. Historically, the majority of vernal pools in Ramona occurred on Placentia soils. These are now represented mainly by the remaining pools in the downtown area and about 20 pools south of Ramona Airport. Many of the Placentia-soil vernal pools were historically associated with mima mound topography; however, the majority of the vernal pools that have been preserved in Ramona occur in swale-type areas or on different soil types, such as Bosanko clay, Bonsall, and Fallbrook-Bonsall series. The soils within the Creelman BSA where Pool #s 8, 9, 10, and 11 are located are mapped as clayey alluvial land (SANGIS 2002). Clayey alluvial lands consist of moderately well drained, very deep, very dark brown to black, neutral to mildly alkaline clay loams to clays (USDA 1973). As stated above, ponded water was not encountered within any of these pools during the 2012 and 2013 field surveys. South of the clayey alluvial land, a relatively narrow extension of Placentia sandy loam (2 to 9 percent slopes) extends from the north in association with the downtown area. Pools #s 1-7 and 13 occur in this soil type. As stated above, only Pool #s 4 and 5 supported water during the 2012 and 2013 field visits and the only animal species detected were amphibians.

The unique flora and fauna of vernal pools in Ramona typically include several indicator plant species such as woolly marbles (*Psilocarphus brevissimus* var. *brevissimus*), water starwort (*Callitriche marginata*), pygmy crassula (*Crassula aquatica*), quillwort (*Isoetes* sp.), toothed downingia (*Downingia cuspidata*), little mouse tail (*Myosurus minimus* ssp. *apus*), spreading navarretia (*Navarretia fossalis*), and San Diego button-celery (*Eryngium aristulatum* var. *parishii*) (TAIC 2005). Alkali playas/meadows also exist in Ramona, typically on Visalia sandy loam (0 to 2 percent slopes) soil types. Indicator plant species that typically dominate these vernal pools consist of Parish's brittlescale (*Atriplex parishii*) with an inclusion of Coulter's saltbush (*Atriplex coulteri*), dwarf peppergrass (*Lepidium latipes*), prairie plantain, alkali barley (*Hordeum depressum*), and southern tarplant (*Centromadia parryi* ssp. *australis*). Of the vernal pool indicator plant species commonly found in Ramona (per TAIC 2005), prairie plantain was the only species found within the project parcel; it was found during AECOM's assessment and limited to Pool #6.

In summary, the pools previously identified during a conservative field classification as vernal pools by AECOM, have been classified by M&A as low-lying areas that do not function as vernal pools but rather function as an extension of the non-native grassland and thus are not unique habitat types per the County RPO (2007) for the following reasons:

- No vernal pool indicator plant species, as listed by the USACOEs Indicator Species for Vernal Pools (1997) or vernal pool obligate species per the draft North County MSCP

Subarea Plan (County 2009) were found onsite during biological surveys performed by AECOM and M&A;

- Lack of ponded water throughout many of the pools during M&A's 2012 and 2013 surveys;
- Expected velocity of surface flows within Drainage 2 based on scour pockets and damaged fencing; and
- Nature of most of these depressions, which includes road ruts within the palm tree nursery operation.

1.4.3. Flora

The project site is dominated by non-native vegetation including Canary Island palms and queen palms, both of which are directly associated with the active palm tree nursery. Non-native grasses are also dominant and form a dense non-native grassland field. A complete list of the floral species observed within the parcel during the biological surveys has been included in this report as Appendix 1.

1.4.4. Fauna

A low diversity of fauna were identified onsite during the biological surveys. Of those species detected, birds were observed in the greatest abundance as it relates to the other species, primarily as a result of fly over detections. Overall, the project site lacks canopy coverage and is dominated by palm trees, many of which are in container pots and moved around. As a result, the quality of the site for fauna is low and expected to primarily be utilized by avian species or urban tolerant meso-predators as foraging and/or dispersal grounds. A complete list of the faunal species observed or detected within the study area during the biological surveys has been included in this report as Appendix 2.

1.4.4.1. Invertebrates

Invertebrates observed on the project site and within the BSA during the biological surveys were limited to a few species of butterflies, all of which are commonly found throughout San Diego County. Those species detected were limited to checkered white (*Pontia protodice*) and acmon blue (*Icaricia acmon acmon*). Due to the dense grassland present throughout most of the BSA, the site's use by butterflies is limited to dispersal grounds.

1.4.4.2. Amphibians

Pacific treefrog (*Pseudacris regilla*) and western toad (*Anaxyrus boreas*) were the only amphibians detected within the project parcel during the biological surveys. Pacific treefrog tadpoles were observed in the spring of 2012 in the northwestern portion of the project parcel (i.e., north of the project site) where pools have formed within the deeper and incised portions of Drainage 2 (i.e.,

Ramona South Creek). Western toad eggs were observed in the spring of 2013 in the shallow ponded areas adjacent to Drainage 2 within the southeastern portion of the project parcel.

1.4.4.3. Reptiles

Western fence lizard (*Sceloporus occidentalis*) was the only reptile species detected on the project site during the biological surveys. All of the observations were noted in areas directly associated with the palm tree nursery. The palm tree nursery provides a great deal of leaf litter for reptiles to feed on small insects and insect larvae.

1.4.4.4. Birds

Few avian species were noted onsite. Those species detected were most commonly associated with the palm tree nursery and/or the adjacent rural lots. Species observed included mourning dove (*Zenaida macroura*), bushtit (*Psaltriparus minimus*), and northern rough-winged swallow (*Stelgidopteryx serripennis*). Several raptors were observed foraging over the site, including five white-tailed kites (*Elanus leucurus*), two red-tailed hawks (*Buteo jamaicensis*), and two red-shouldered hawks (*Buteo lineatus*). In addition, one turkey vulture (*Cathartes aura*) was observed foraging on a pile of discarded palm trees and debris while up to five turkey vultures were observed flying over the site. One red-tailed hawk nest is located within the eucalyptus canopy located offsite, just northeast of the BSA. Although located offsite and outside of the BSA, this nest location is shown on the biological figures within this report. No other raptor nests were observed within the project parcel including the BSA; however, due to the presence of the white-tailed kites and red-shouldered hawks (copulation observed on the overhead powerlines to the west of the project site), nest sites for these species are expected to be within the surrounding semi-rural residential community. There is no suitable habitat for avian tree and/or shrub nesting and/or escape from predators on the project site. While the active palm tree nursery forms a canopy composed of relatively dense immature palm leaves, the nature of business including selling and relocation of the plants is expected to deter avian species from nesting onsite. Several species of birds occurring offsite but within the adjacent areas are ground nesters, including western meadowlark (*Sturnella neglecta*). If this species were to occur onsite, it would be expected to nest within the dense non-native grassland habitat.

1.4.4.5. Mammals

California ground squirrel (*Spermophilus beecheyi nudipes*) was the most commonly observed mammal species. They were observed throughout the project site and entire BSA. While other meso-predators and medium sized mammals may use the site, their use is expected to be limited to dispersal grounds only.

1.4.5. Sensitive Plant Species

1.4.5.1. Sensitive Plant Species Present on the Project Site

No special-status flora species were identified on the project site during the biological surveys.

1.4.5.2. Occurrence Potential of Sensitive Plant Species on the Project Site

An evaluation of the potential for special status plant species to occur on the project site was conducted based on suitable habitat, site conditions, as well as those provided in the County project scoping letter, dated August 2 as modified and accepted by the County in December 2013 (M&A 2013b). Appendix 3 provides a complete listing of the special status species evaluated with their respective status, suitable habitat, and an assessment of their potential for presence. No special-status flora species are considered to have a moderate or high potential to occur on the project site.

1.4.6. Sensitive Animal Species

1.4.6.1. Sensitive Animal Species Present on the Project Site

Three special-status fauna species were identified on the project site, including the BSA during the biological surveys: red-shouldered hawk, turkey vulture, and white-tailed kite (Figure 6). Overall, no nests were identified on the project site or within the BSA; rather, these species are expected to utilize the site and adjacent areas for foraging and dispersal grounds only.

Red-shouldered Hawk (*Buteo lineatus*)

Two red-shouldered hawks were observed copulating on the powerline trending north south along Casteel Lane, just west of the project site during the 2014 biological survey. Prior to the 2014 observation, one red-shouldered hawk was detected during the biological surveys at the same location. Red-shouldered hawks are year-round residents of San Diego County and found throughout riparian woodlands as well as rural residential areas inclusive of orchards and eucalyptus woodlands. No nests belonging to this species were observed onsite or within the BSA. There are no suitable nesting locations on the project site and there is only a limited amount of suitable nesting habitat (i.e., canopies of eucalyptus woodland) within the BSA. It is likely that these individuals nest within proximity to the BSA in canopies associated with the semi-rural residential community. As it pertains to the project site and BSA, this species is expected to utilize the area for foraging and dispersal grounds. Red-shouldered hawk is listed on the County's Animal Group 1 list (i.e., Animals rare, threatened or endangered in California and elsewhere).

Turkey Vulture (*Cathartes aura*)

One turkey vulture was observed foraging on a pile of discarded palm trees/debris in the project site while up to six turkey vultures were observed flying over the site during the 2014 biological survey.

Turkey vultures are year-round residents of San Diego County, which use extensive open areas with protective roost sites. There is no suitable nesting habitat and no known nesting locations within or in proximity to the BSA. Rather, this species is expected to utilize the BSA for foraging and dispersal grounds only. Turkey vulture is listed on the County's Animal Group 1 list.

White-tailed Kite (*Elanus leucurus*)

Five white-tailed kites (assumed one pair and three juveniles) were observed perched on the overhead power lines within the existing roadway and utility easement, just west of the project site in the spring of 2012. White-tailed kites are year-round residents of San Diego County and prefer to nest in riparian woodland, oak groves or sycamore groves adjacent to grasslands for foraging. No nests were observed on the project site or within the BSA. There is no potentially suitable nesting habitat and no known nesting locations onsite or within the BSA. This species is expected to nest adjacent to the BSA within the eucalyptus woodland habitat associated with the semi-rural residential lots. White-tailed kites are expected to utilize the site for dispersal and foraging grounds only. White-tailed kite is a CDFW fully protected species, a special animal by CNDDB, and County Animal Group 1 species.

1.4.6.2. Occurrence Potential of Sensitive Animal Species on the Project Site

An evaluation of the potential for special status animal species to occur on the project site was conducted based on suitable habitat, site conditions, as well as those provided in the County project scoping letter, dated August 2, 2013 as modified and accepted by the County in December 2013 (M&A 2013b). Appendix 3 provides a complete listing of the special status species evaluated with their respective status, suitable habitat, and an assessment of their potential for presence.

Two special status animal species are considered to have a moderate potential to occur on the project site: northern harrier (*Circus cyaneus*) and grasshopper sparrow (*Ammodramus savannarum*). The northern harrier is a yearlong and winter resident in San Diego County that can use flat, or hummocky, open areas of tall, dense grasses for nesting, cover, and feeding. Although this species was not observed during the biological surveys nor are there CNDDB records for this species onsite or within the BSA, there is a potential for this species to nest in the non-native grassland onsite and/or within the BSA. Northern harriers are identified as a special animal by CNDDB, CDFW species of special concern, and County Animal Group 1 species.

Grasshopper sparrow is a sedentary, year-round resident of San Diego County generally restricted to native grassland with a mix of grasses, forbs, and shrubs for foraging and nesting; however, lack of habitat has forced it into areas of non-native grassland (Unitt 2004). Although this species was not observed during the biological surveys nor are there CNDDB records for this species within the BSA, there is a potential for this species to nest in the non-native grassland onsite and/or within the BSA. Grasshopper sparrows are identified as a special animal by CNDDB, CDFW species of special concern, and County Animal Group 1 species.

1.4.7. Wetlands and Jurisdictional Waters

Three drainage features are located onsite and extend into the project parcel (Figure 6). From north to south they are referred to as Drainage 1, Drainage 2 (Ramona South Creek), and an isolated water of the state (i.e., a portion of Drainage 3). Drainage 1 and 2 lie north of the proposed solar facility but within the landscape screening footprint and convey flow in a northwestward direction through dense non-native grassland. The isolated water of the state (a portion of Drainage 3) lies within the limits of the proposed solar facility.

Drainage 1 merges with Drainage 2 in the northwestern portion of the project parcel. Both drainage systems support well defined but discontinuous OWHM indicators (i.e., drainage patterns) and originate east of Ashley Road. Both are assumed to be jurisdictional, non-navigable waters of the U.S./streambed and regulated by the USACOE under section 404 of the CWA, RWQCB under section 401 of the CWA, and CDFW under section 1602 of the California FGC. They receive water runoff only after rain events, and thus, are defined as non-relatively permanent waters (non-RPW) that only flow for a short time. Based on aerial review, they connect to Santa Maria Creek approximately four miles northwest of the BSA and ultimately drain indirectly into tidal waters of San Elijo Lagoon prior to entering the Pacific Ocean, a TNW located approximately 30 miles west of the site, via San Dieguito River.

The third drainage feature originates within the existing palm tree nursery with well-defined banks but ultimately dissipates into the dense non-native grassland after approximately 110 feet. This system ultimately drains northwestward and connects to Ramona South Creek within the BSA via a discontinuous, wide swale that lacks OHWM indicators (i.e., drainage patterns, drift deposits, etc.). Due to the lack of OHWM indicators over the majority of the swale, only the portion of the drainage that supports well-defined banks within the palm tree nursery is expected to be regulated as an isolated water of the state by CDFW under section 1602 of the FGC and RWQCB under provisions of the Porter-Cologne Water Quality Control Act.

Table 3 below indicates the acreages of jurisdictional WoUS within the project site and Figure 6 shows the locations of these resources. Wetland determination data forms and photo points have been included with this report in Appendix 4.

Table 3. Jurisdictional Resources on the Project Site

Jurisdictional Resources	USACOE (acreage)	RWQCB (acreage)	CDFW (acreage)	County (acreage)
Non-wetland Waters/Streambed	0.002	0.002	0.002	0.000
Isolated Water of the State	0.000	0.000	0.005	0.000
Total:	**0.002**	**0.002**	**0.007**	**0.000**

Drainage 1 and 2 drain the semi-rural residential lots from the east via dip sections in Ashley Road. These drainages are blue-line features on the USGS 7.5' Ramona, California Quadrangle although historically they may have merged toward the central-eastern portion of the project parcel and flowed northward, where homes now occur as opposed to their current location in the northwestern corner of the site along Barnett Road. The watershed for this area is expected to be approximately 0.7 sq. miles, and drain a local mountain range to the east through relatively flat non-native grassland/agricultural lands. Velocity of the surface runoff in these drainages is expected to be short-lived but high velocity due to the small watershed as well as the condition of the existing chain link fence at road crossings, which is generally pushed over and filled with debris. In addition, sporadic scour pockets are present within Drainage 2. Overall, the features of both drainage systems are moderate to well defined with mostly detectable OWHMs (i.e., drainage patterns). Segments of the drainage beds are incised and relatively deep, ranging from approximately one to four feet. Segments of the drainage patterns dissipate within the dense non-native grassland; however, they ultimately reemerge further downstream. Of notable interest are the defined drainage patterns of Drainage 2, which dissipate at approximately 120 feet west of Ashley Road for approximately 500 feet and reappear near a deeply incised scour pocket. Near the point at which the OHWM indicators disappear, the vegetation supports an area of 50 percent hydrophytic vegetation [i.e., hare barley (UPL) and Italian ryegrass (FAC)]. Although this does not meet the hydrophytic dominance test, the composition is slightly different than other portions of the drainage systems. Nevertheless, the community has been classified as non-native grassland. Overall, the grassland community creates an approximate two-foot tall, dense vegetative cover dominated by non-native species including hare barley (UPL), Italian ryegrass (FAC), soft chess (UPL), and slender wild oat (UPL), with inclusions of curly dock (FACW). The drainages are not dominated by hydrophytic vegetation and hydric soils were not detected onsite. Based on the defined OHWMs and lack of hydrophytic vegetation, the drainage features would be regulated as waters of the U.S./streambed. The regulatory authority limits for the USACOE, RWQCB, and CDFW were delineated based on the OHWM indicators (i.e., drainage patterns) and range from approximately two to four feet wide. These drainages are not considered County RPO wetlands due to the lack of a predominance of hydrophytic vegetation and lack of hydric soils.

The third feature drains the semi-rural residential lots to the south of the SDG&E parcel. These lots sit on a hilltop and overlook the site. The watershed for this area is expected to be approximately 0.05 sq. miles and drain the hillside via a culvert under Creelman Lane. Velocity of the surface runoff though the culvert is expected to be low due to the lack of OHWM indicators upslope and downslope through the palm tree nursery. A narrow incised drainage (approximately two feet wide by ten inches deep) is ultimately formed approximately 270 feet north of Creelman Lane. Here, the drainage is located on the north side of an existing dirt access road within the palm tree nursery and conveys surface flow through a small patch of non-native grassland (composed of the same plant species listed in the above paragraph) but ultimately dissipates after approximately 110 feet. This system drains northwestward (based on aerial review) and connects to Ramona South Creek within

the BSA via a discontinuous, wide swale that lacks OHWM indicators. Specifically, there is no clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or presence of litter and debris. Per the USACOEs Jurisdictional Determination Form Instructional Guidebook (2007), swales are generally characterized as "…shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale." The guidebook further states that swales are generally not waters of the U.S. because they are not tributaries or they do not have a significant nexus to TNWs. Although the swale connects with Ramona South Creek, the boundaries of the swale itself are discontinuous. In addition, M&A biologists conducted biological surveys after rain events in 2012 and no water was observed within the swale nor was their evidence that the vegetation has been pushed down due to any surface flows. However, during the same visit, surface water was observed within the deep scour pockets of Ramona South Creek in the northwestern portion of the site. Lastly, the watershed associated with this system is small and with the exception of the incised channel, OHWM indicators were not observed. It is possible that the incised channel has formed from years of irrigation associated with the palm tree operation, was dugout to direct the irrigation runoff through the nursery, and/or a combination of the two. Nonetheless, the swale is expected to receive surface runoff but is not expected to support surface water long enough to form defined OHWM indicators, support hydrophytic vegetation, or hydric soils. For these reasons, only the portion of the drainage that supports well-defined banks within the palm tree nursery is expected to be regulated as an isolated water of the state by CDFW under section 1602 of the FGC and RWQCB under provisions of the Porter-Cologne Water Quality Control Act. This system is not considered County RPO wetlands due to the lack of a predominance of hydrophytic vegetation and lack of hydric soils.

Overall, the drainage systems are expected to have moderate physical and chemical functions. Specifically, the flat elevation is expected to result in water flowing slower, yielding more ground water recharge, sediment retention, and nutrient transformation; however, the location of the site within the watershed results in high velocity flows over short periods of time in Drainage 1 and 2. Biologically the site lacks a diverse canopy and/or herbaceous stratum and thus its potential to support fauna is limited to dispersal and/or foraging grounds for small to medium sized urban tolerant meso-predators as well as avian species associated with non-native grassland communities.

1.4.8. Habitat Connectivity and Wildlife Corridors

The northeastern most portion of the BSA, inclusive of a portion of the landscape screening along Ashley Road lies within a regional wildlife corridor planning overlay identified in the draft North County MSCP Subarea Plan. Specifically, the northeastern most portion of the BSA lies within the Eastern Ramona Core Planning Unit (Core 15), PAMA segment while the remaining site lies outside of a designated wildlife corridor. Core 15 consists of approximately 18,966 acres of east of downtown Ramona, south of Lake Southerland, including lands east of Barona Reservation. Most of

the land within Core 15 is rural, agricultural, and natural lands including large ranchettes in the northern half (i.e., west of the project site). The conservation goal for this Core includes: minimization of impacts to grassland including those that support the Stephens' kangaroo rat (*Dipodomys stephensi*), grasshopper sparrow, or large numbers of raptors; or with clay soil known to support San Diego thornmint (*Acanthomintha ilicifolia*); and to maintain connectivity through natural and agricultural lands for wildlife movement of large and medium sized mammals between preserved habitats along Escondido Creek canyon and Hatfield Creek (a tributary to Santa Maria Creek). Hatfield Creek is located north of SR-76, approximately two miles north of the BSA.

Most of the non-native grassland within the project site occurs outside the limits of Eastern Ramona Core Planning Unit (Core 15). The exception to this is the footprint for the landscape screening, along Ashley Road. Overall, the non-native grassland within the project site and BSA is expected to function as breeding, dispersal, and foraging grounds predominantly for common avian and small to medium sized mammals and/or rodents. The project site abuts relatively dense rural development to the west and north, and thus, any movement through the entire site is highly constrained and limited to avian species and/or urban tolerant meso-predators such as coyote (*Canis latrans clepticus*) and raccoon (*Procyon lotor psora*). In addition, the site lacks topography that typically facilitates wildlife movement including canyon bottoms and/or ridgelines, as well as canopy coverage which is necessary for movement of medium to large sized mammals such as mule deer (*Odocoileus hemionus fuliginata*) and mountain lion (*Puma concolor californicus*).

1.5. Applicable Regulations

A variety of federal, state, and county regulations potentially apply to the proposed project. These regulations are listed herein with a brief description.

1.5.1. Federal Regulations and Standards

1.5.1.1. Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) was enacted in 1918. Its purpose is to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The USFWS maintains a list of migratory birds that are protected by this act and most birds of the San Diego region are included.

Under the MBTA of 1918 (16 U.S.C. section 703-712; Ch. 128; July 3, 1918; 40 Stat. 755; as amended 1936, 1956, 1960, 1968, 1969, 1974, 1978, 1986 and 1998), it is unlawful, except as permitted by the USFWS, to "take, possess, transport, sell, purchase, barter, import, or export all species of birds protected by the MBTA, as well as their feathers, parts, nests, or eggs (USFWS 2003). Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12). Birds protected by the MBTA

include all birds covered by the treaties for the protection of migratory birds between the United States and Great Britain (on behalf of Canada, 1916), Mexico (1936), Japan (1972), and Russia (1976), and subsequent amendments."

It is important to note that since the MBTA addresses migratory birds by family rather than at a lower taxonomic level, most bird species are protected by the MBTA because most taxonomic families include migratory members. In addition, "take" as defined under the federal MBTA is not synonymous with "take" as defined under the federal Endangered Species Act (ESA). The MBTA definition of "take" lacks a "harm and harassment" clause comparable to "take" under the ESA, thus, the MBTA authority does not extend to activities beyond the nests, eggs, feathers, or specific bird parts (i.e., activities or habitat modification in the vicinity of nesting birds that do not result in "take" as defined under the MBTA are not prohibited). Further, "a permit is not required to dislodge or destroy migratory bird nests that are not occupied by juveniles or eggs; however, any such destruction that results in take of any migratory bird is a violation of the MBTA (i.e., where juveniles still depend on the nest for survival) (USFWS 2003)."

1.5.1.2. Federal Water Pollution Control Act (Clean Water Act), 1972

In 1948, Congress first passed the Federal Water Pollution Control Act. This act was amended in 1972 and became known as the CWA (33 U.S.C. 1251). The act regulates the discharge of pollutants into waters of the U.S. Under Section 404, permits need to be obtained from the USACOE for discharge of dredge or fill material into waters of the U.S. Under Section 401 of the CWA, Water Quality Certification from the RWQCB would need to be obtained if there are to be any impacts to waters of the U.S.

1.5.2. State Regulations and Standards

1.5.2.1. California Environmental Quality Act (CEQA)

CEQA requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

1.5.2.2. California Fish and Game Code (FGC)

The FGC regulates the taking or possession of birds, mammals, fish, amphibian and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA) (Sections 2050-2115) and SAA regulations (Section 1600-1616), as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife.

In addition, Sections 3503, 3503.5, and 3513 of the FGC prohibit the "take, possession, or destruction of bird nests or eggs." Section 3503 states: "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Section 3503.5 provides a refined and greater protection for birds-of-prey and states: "It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." The distinctions made for birds-of-prey are the inclusion of such birds themselves to the protections and the elimination of the term "needlessly" from the language of §3503. Section 3513 states: "It is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act."

The definition of "take" under the FGC is not distinct from the definition of "take" under CESA, which is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (California Fish and Game Code §86); however, it is important to note that the state definition of "take" again does not include a "harm and harassment" clause, and thus, activities or habitat modification in the vicinity of nesting birds that do not result in "take" as defined under the FGC/CESA are not prohibited.

1.5.2.3. Porter-Cologne Water Quality Control Act

This act is the California equivalent of the Federal CWA. It provides for statewide coordination of water quality regulations through the establishment of the SWRCB and nine separate RWQCBs that oversee water quality on a day-to-day basis at the regional/local level.

1.5.2.4. Natural Community Conservation Planning (NCCP) Act of 1991

The Natural Community Conservation Planning Act of 1991 (NCCP) is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. The CDFW is the principal state agency implementing the NCCP Program. NCCP Plans developed in accordance with the Act provide for comprehensive management and conservation of multiple wildlife species and identify and provide for the regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth.

1.5.3. Local Regulations and Standards

1.5.3.1. Resource Protection Ordinance

The County RPO restricts impacts to various natural resources including wetlands, Sensitive Habitat Lands, and Steep Slopes (County 2010b). The County RPO (2007) defines "Sensitive Habitat Lands" as: "Land which supports unique vegetation communities, or the habitats of rare or

endangered species or sub-species of animals or plants as defined by Section 15380 of the State CEQA Guidelines (14 Cal. Admin. Code Section 15000 et seq.), including the area which is necessary to support a viable population of any of the above species in perpetuity, or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor. 'Unique vegetation community' refers to associations of plant species, which are rare or substantially depleted. These may contain rare or endangered species, but other species may be included because they are unusual or limited due to a number of factors, for example: (a) they are only found in the San Diego region; (b) they are a local representative of a species or association of species not generally found in San Diego County; or (c) they are outstanding examples of the community type as identified by the California Department of Fish and Game listing of community associations." Thus, County RPO Sensitive Habitat Lands include, but may not be limited to: lands that include populations of sensitive species (i.e., federally and state listed species, County List A plant species, and County Group 1 wildlife species); lands that contain unique vegetation communities, as defined above (e.g., maritime succulent scrub, southern coastal bluff scrub, coastal and desert dunes, calcicolous scrub, maritime chaparral, valley sacaton grassland, hardpan and claypan vernal pools, montane meadows, mesquite bosque, native grassland, and Torrey pine forest); and additional vegetation communities (e.g., coastal sage scrub, oak woodland, chaparral, and non-native grassland) if they include populations of sensitive species (i.e., federally and state listed species, County List A plant species, and County Group 1 wildlife species), or are critical to a balanced ecosystem, or are part of a functioning wildlife corridor (County 2010b, Section 2.3).

The RPO also restricts impacts on wetlands buffers and floodplains. The RPO states that no impacts may occur on lands determined to be wetlands as defined by the ordinance (excepting aquaculture, scientific research, and/or wetland restoration) and requires that a wetlands buffer varying between 50 and 200 feet be provided to further protect existing resources. The buffer width is determined by the quality of the wetlands functions, vegetation, soils, and the landscape context. A 50-foot wetland buffer is required for lower quality RPO wetlands, 50 to 100 feet is required for moderate to high quality RPO wetlands, and 100 to 200 feet is required for wetlands within regional wildlife corridors, wetlands that support significant populations of wetland-associated sensitive species, or where stream physical factors indicate a wider buffer is necessary to preserve existing wildlife habitat.

2.0 PROJECT EFFECTS

Project effects are evaluated in terms of direct, indirect and cumulative impacts to biological resources that may result from implementation of the project.

Direct impacts are defined as "effects which are caused by the project and occur at the same time and place" and relate to a "physical change" in the environment [CEQA Guidelines §15358 (a) (1) and (b) (Title 14, Chapter 3, Article 20].

Indirect impacts are defined as "effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable" and relate to a "physical change" in the environment [CEQA Guidelines §15358 (a) (2) and (b) (Title 14, Chapter 3, Article 20].

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" [CEQA Guidelines §15355 (Title 14, Chapter 3, Article 20].

Direct, indirect, and cumulative impacts can be described as either permanent or temporary (County 2010b). Permanent impacts are generally defined as effects that would result in an irreversible loss of biological resources; temporary impacts can be defined as effects that could be restored, thus providing habitat and wildlife functions and values effectively equal to the functions and values that existed before the area was impacted.

As previously discussed in more detail within Section 1.2 of this report, project impacts would occur from development and operation of a solar facility consisting of PV solar modules with associated facilities (e.g., inverters, 4,000 gallon water tank, perimeter fire access road/fuel modification zone) all enclosed by an eight-foot high security chain link fence. Additional onsite project elements include minor improvements to expand the existing driveway entrance on Creelman Lane, improvements to temporarily expand the driveway on Ashley Road (which would ultimately be landscaped after completion of the project), landscape screening along the southern, western, and eastern perimeters of the project parcel, and access to the existing wells and water tank in the northwestern portion of the parcel. Two offsite project elements are required for the project: 1) utility trenching associated with the interconnect pole located within an existing roadway and utility easement and 2) construction of the Dye Road Pathway within the ROW of Creelman Lane. All staging areas would occur within the onsite portions of the project site. No impacts are associated with use of the existing fire hydrants located near the southeastern and southwestern corners of the project site.

Direct impacts were determined by overlaying the project plans on the mapped vegetation communities/habitats and sensitive species in GIS ESRI software platforms. All land within the solar facility and expanded driveway entrance would be converted from their existing use as either non-native grassland, intensive agriculture, and disturbed habitat to a solar facility or driveway and thus

have been classified as a direct, permanent impact. The exception to this is an isolated water of the state that would not be cleared/contoured during the construction process. In addition, the PV panel footings/equipment would not be located within the OHWM associated with the isolated water, rather the panels would span the OHWM in order to avoid placement of fill within the bed and banks. Lastly, the PV solar modules would be mounted on fixed tilt system and directed southward with a minimum height of approximately four feet, as measured from the ground surface.

Landscape screening is proposed along the southern, western, and eastern perimeters of the project parcel. A portion of the landscape screening would occur within County 100-year floodplain; however, plants are not proposed within the County floodway. In addition, plants have been set back approximately 15 feet from the centerline of the bed and bank associated with the drainage in the northeastern corner of the site. Although the landscape screening is considered a direct, permanent impact for purposes of this report, it is proposed within the same general footprint of the existing Canary Island palms rooted in the ground, native shrubs and grasses including laurel sumac, toyon, lemonadeberry, varieties of sage, *Ceanothus*, and deergrass would be used along with a few species of non-native non-invasive plants, grading would not be required, and the landscape screening would not preclude the growth of non-native grasses.

A trench, approximately 60 feet long, three feet wide, and four feet deep would be required for the underground wires associated with the interconnect pole. The work area for the trenching would be approximately 20 feet wide and 60 feet long, all within an existing roadway and utility easement. The trench would be backfilled and returned to pre-project conditions; thus, impacts are considered temporary.

In order to control dust within the solar facility, a non-toxic, biodegradable, permeable soil binding agent or permeable rock material (e.g., DG or gravel) would be applied to unvegetated areas and the fire access road/fuel modification zone.

Habitat impacts are summarized within Table 4, below and depicted in Figure 7 (see Appendix 5 for Plot Plan).

Table 4. Habitat/Vegetation Communities and Impacts

Habitat/Vegetation Community	Existing Acreage		Project Impacts (Acres)		Impact Neutral
	Onsite	Offsite	Onsite	Offsite	
Non-native grassland	4.8	0.3	4.8[1]	0.3[2]	0.0
Intensive agriculture	12.1	<0.1	12.1[3]	<0.1[4]	0.0
Eucalyptus woodland	<0.1	0.0	<0.1[5]	0.0	0.0
Disturbed habitat	1.1	0.0	1.1	0.0	0.0
Urban/developed	<0.1	<0.1	<0.1	<0.1[2]	
Total:	**18.0**	**0.3**	**18.0**	**0.3**	**0.0**

[1] Project impacts to non-native grassland would result from construction of the solar facility (permanent impact 3.4 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.3 acres).

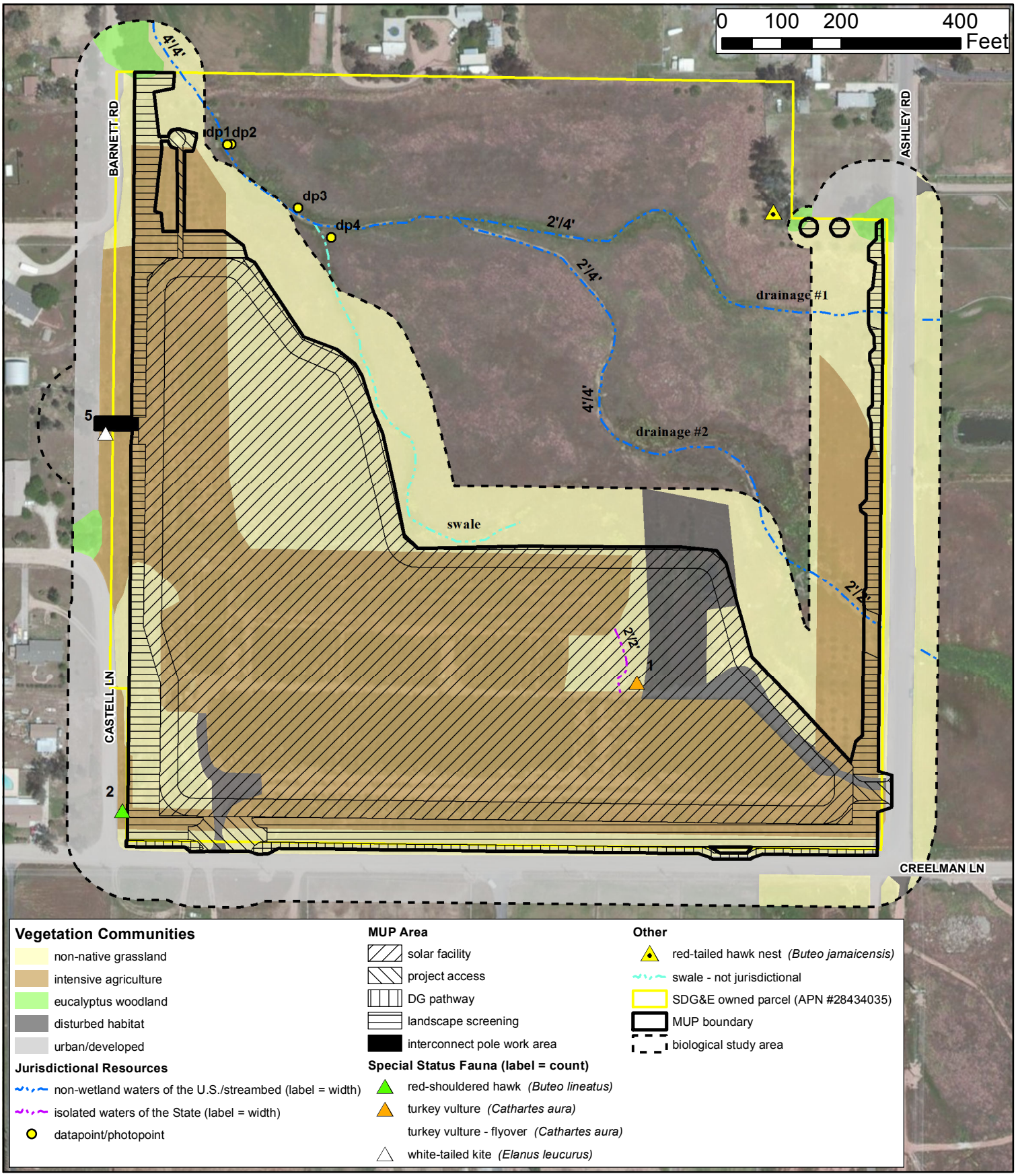
[2] The project design includes the construction of a maximum 10-foot wide Dye Road Pathway within the ROW of Creelman Lane (offsite; 0.3 acres of impact to non-native grassland and <0.1 acre to urban/developed). Areas within the ROW disturbed during construction but not covered with DG (i.e., approximately 0.01-acre) would be hydroseeded for erosion control.

[3] Project impacts to intensive agriculture would result from construction of the solar facility (permanent impact 10.5 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.5 acres).

[4] Offsite impacts to intensive agriculture would result from trenching for the underground utility line from the interconnect pole (temporary impact).

[5] Project impacts to eucalyptus woodland would result from installation of landscape screening; however, no removal/trimming of eucalyptus woodland canopy is expected to be required.

Indirect impacts were determined based on the design, intended use, and location of the proposed project elements relative to biological resources. Project construction is expected to result in indirect impacts to vegetation communities, most notably from the effects of disturbance/clearing of vegetation within the project footprint of the solar facility that could result in conditions suitable for: 1) non-native, weedy species intrusion and 2) subsequent erosion or sedimentation.



Vegetation Communities
- non-native grassland
- intensive agriculture
- eucalyptus woodland
- disturbed habitat
- urban/developed

Jurisdictional Resources
- non-wetland waters of the U.S./streambed (label = width)
- isolated waters of the State (label = width)
- datapoint/photopoint

MUP Area
- solar facility
- project access
- DG pathway
- landscape screening
- interconnect pole work area

Special Status Fauna (label = count)
- red-shouldered hawk *(Buteo lineatus)*
- turkey vulture *(Cathartes aura)*
- turkey vulture - flyover *(Cathartes aura)*
- white-tailed kite *(Elanus leucurus)*

Other
- red-tailed hawk nest *(Buteo jamaicensis)*
- swale - not jurisdictional
- SDG&E owned parcel (APN #28434035)
- MUP boundary
- biological study area

N W E S

Biological Resources with Impacts Map

IES/SDG&E Solar Energy Project - Ramona
(County Record ID: PDS2014-MUP-14-013)

Aerial Source: Microsoft 2012

Figure 7

3.0 SPECIAL STATUS SPECIES

3.1. Guidelines for Determination of Significance

An impact would be determined significant per CEQA if the project would result in the following condition.

> *The project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.*

3.2. Analysis of Project Effects

The following criteria (A-L) from the County of San Diego Guidelines for Determining Significance [for] Biological Resources (2010b) are evaluated below to provide evidence to support a determination of whether or not an impact is significant under the above guideline.

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

No federally or state listed endangered or threatened species occur on the project site and none have a moderate or high potential to occur onsite.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a state Species of Special Concern.

No County List A or B plant species would be impacted since none occur on the project site and none have a moderate or high potential to occur onsite.

Five County Group 1 avian species were either observed onsite or have at least a moderate potential to occur onsite; they are: red-shouldered hawk, turkey vulture, white-tailed kite, northern harrier, and grasshopper sparrow. Below is a discussion of each species.

Red-shouldered hawk (County Group 1), turkey vulture (County Group 1), and white-tailed kite (CDFW fully protected and County Group 1) were observed perched near, foraging, and/or flying over the project site but no suitable nesting habitat occurs onsite or within the BSA. As a result, the site is expected to serve as foraging and dispersal grounds only for the above-listed species. A significant local or regional population of red-shouldered hawk, turkey vulture, and/or white-tailed kite is not expected onsite since no nests were observed and no potentially suitable nesting habitat occurs on the project site; therefore, implementation of the proposed project is not expected to impact the survival of a local population of these species.

If present, the project has the potential to directly impact northern harriers and grasshopper sparrows nesting on the ground within the non-native grassland. Northern harriers and grasshopper sparrows are both identified as special animals by CNDDB, state Species of Special Concern by CDFW, and

are on the County Animal Group 1 list. Although both species were not observed onsite during the biological surveys and no known nesting locations occur on the project site or within the BSA, there is a moderate potential for them to nest and forage onsite due to the presence of potentially suitable nesting and foraging habitat within the non-native grassland. The non-native grassland within the BSA is typical of northern harrier nesting sites, consisting of flat, or hummocky areas of tall, dense grasses for nesting, cover, and feeding and thus the habitat. However, the proximity to the active palm tree nursery operations and residential lots to the west are expected to deter nesting onsite and within the BSA; thus, the overall quality of nesting habitat is expected to be low. The preferred nesting habitat of grasshopper sparrows is native grassland with a mix of shrubs; however, in absence of their preferred habitat, grasshopper sparrows are known to utilize lower quality habitats consisting of non-native grassland. Due to the lack of preferred habitat within the BSA, it is possible for grasshopper sparrows to utilize the lower quality non-native grassland onsite and within the BSA for nesting and/or foraging.

The project proposes to impact 5.1 acres of fragmented areas of non-native grassland. Of this total, 3.5 acres would result from the solar facility and widening of the entrance path, 1.3 acres would result from landscape screening, and 0.3 acres would result from construction of the Dye Road Pathway within the ROW of Creelman Lane. While the impacts from the landscape screening have been classified as permanent, native shrubs and grasses would be used, contouring/grading of the site would not be required (in most areas), and the growth of non-native grasses would not be precluded. In addition, a portion of the landscape acreage includes access to the existing wells and water tank in the northwestern portion of the site (approximately 0.03 acres). No grading is required for the path; rather the path would be left as-is, and if determined necessary during maintenance visits, the grasses within the path would be trimmed with a weed eater (or similar equipment). As a result, this area could potentially be used as nesting and/or foraging grounds for the northern harrier and grasshopper sparrow. The majority of the non-native grassland within the project parcel occurs outside of the BSA and would not be impacted by the proposed project. The total acreage of non-native grassland within the project parcel is 21.9 acres. If present, the impact to potential nesting and/or foraging habitat for the northern harrier and grasshopper sparrow would total approximately 17 percent of the non-native grassland within the project parcel. Although the proposed project would impact more than five percent of potentially suitable habitat on the project parcel, the proposed impact area is considered low quality nesting habitat for both the northern harrier and grasshopper for reasons described above. As a result of the low quality nesting habitat combined with the lack of recent and/or historical detection on the project site or within the BSA, it is reasonable to conclude that the project would not have a substantial adverse effect on the local long-term survival of northern harriers or grasshopper sparrows or an onsite population of these species. Thus, the project impacts to potentially suitable habitat for the northern harrier and grasshopper sparrow would be considered less than significant.

Project impacts that could affect the nesting success of ground-nesting raptors such as the northern harrier would be considered significant per the County Report Guidelines for Determining Significance [for] Biological Resources (County 2010b). In effort to avoid impacts to ground-nesting raptors such as the northern harrier from direct loss of habitat and/or construction noise that could affect the nesting success of this species if present within the BSA, the project mitigation measure listed within the following Section 3.4 is recommended to be implemented to reduce impacts to a level below significance. In addition, active avian nests are protected under the federal Migratory Bird Treaty Act (MBTA) and FGC §3503 and §3513. Project mitigation measures to ensure compliance with the federal MBTA and California Fish and Game Codes is discussed in Section 7.2 of this report.

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

No County List C or D plant species and no County Group 2 animal species would be impacted since none occur on the project site and none have a moderate or high potential to occur onsite.

D. The project may impact arroyo toad (Bufo californicus) aestivation, foraging or breeding habitat.

The proposed project would not result in impacts to arroyo toad aestivation, foraging or breeding since this species is not expected to occur onsite based on a lack of potentially suitable habitat.

E. The project would impact golden eagle (Aquila chrysaetos) habitat.

The project would not impact golden eagle nesting or foraging habitat. There is no suitable nesting habitat onsite or within the BSA and this species has not historically been reported within the vicinity of the project (i.e., Grid L15 of the San Diego Natural History Museum San Diego County Bird Atlas project; a gird represents nine sq. miles) (Unitt 2004). There are no reported nests within 4,000 feet of the project site. The closest confirmed breeding location is greater than five miles (26,400 feet) from the project site (Unitt 2004; confirmed breeding between 1997-2001).

F. The project would result in loss of functional foraging habitat for raptors.

The project would result in loss of foraging habitat for raptors (i.e., red-shouldered hawk, turkey vulture, white-tailed kite, and potentially northern harrier if present) as a result of converting the non-native grassland to a solar facility. However, impermeable surfaces would be limited to the 4,000 gallon water tank and concrete pads for the switchgear and inverters, which accounts for approximately 0.01-acre of the proposed project. As discussed above in Section 3.2B of this report, the proposed impact to non-native grassland is not anticipated to have an adverse effect on the local long-term survival of any raptor species and thus is considered less than significant.

G. The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that

supports a viable population of a sensitive wildlife species or an area that supports multiple wildlife species.

The project would not impact the viability of a core wildlife area. As described within Section 1.4.8 of this report, the eastern most portion of the site is within Core 15 of the draft North County MSCP PAMA. The project site abuts relatively dense semi-rural development to the west and north, and thus, any movement beyond the project parcel is highly constrained. Due to the surrounding semi-rural development and the lack of topography that typically facilitates wildlife movement such as canyon bottoms and ridgelines, the project parcel including the project site is likely limited to the movement of avian species and/or urban tolerant meso-predators. In addition, the site lacks canopy coverage which is necessary for movement of medium to large sized mammals. As a result, the project is not expected to have an adverse effect on the viability of a core wildlife area.

H. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

The project is a solar generation facility bound by chain link fence on land that has been leased since 1998 as an active palm tree nursery. The below paragraphs evaluate potential indirect impacts as a result of increased human access or competition/predation from domestic animals, pests, or exotic species, drainage patterns, lighting, noise, heat/steam, and light reflection.

Human Access

The facility would require minimal long-term maintenance, which could consist of approximately 56 trips to the site per year by approximately two to four staff as needed for site inspections, repairs, maintenance, panel washing, etc. The site visits are expected to occur during daylight hours, access would be limited to the designated project areas (i.e., within the security fence and/or landscape maintenance areas), and no pets would be allowed onsite. Access to the site is presently required for operations of the Palm Tree Nursery. The site access necessary to support the proposed SEP project would be similar to existing conditions. As a result, due to the existing conditions and proposed limited access requirements, the proposed project would not result in permanent, indirect impacts to the surrounding habitat through increased human access or competition/predation from domestic animals that would otherwise be associated with residential development.

Invasive Species

The potential for the project to result in permanent, indirect impacts to the surrounding habitat from increased invasive species is low due to the project fuel maintenance requirements and landscape maintenance requirements, which are required for the life of the project. Specifically, the MUP area would be cleared, grubbed, and graded to allow for construction of the facility. In order to control dust during the life of the proposed project, a suitable permeable soil-binding agent would be applied to unvegetated areas within the limits of the proposed security fence. These agents would be

biodegradable, eco-safe, with liquid copolymers that stabilize and solidify soils or aggregates and facilitate dust suppression. In addition, a four-inch thick permeable rock material consisting of either DG or gravel would be placed on the fire access road. The soil binding agents are expected to reduce the potential for plant growth while stabilizing soil to reduce dust and erosion; however, if vegetation does grow within this area, the vegetation must be maintained to a maximum height of six inches as a requirement of fuel management purposes. The project also includes landscape screening consisting of native shrubs including but not limited to laurel sumac, toyon, and lemonadeberry, as well as smaller native shrubs with seasonal flowers, such as varieties of sage, *Ceanothus*, and deergrass. Several species of non-native plants are also proposed and would be intermixed throughout the landscape area to provide early screening due to their rapid growth rate and dense foliage. The proposed non-native plants are not invasive and are a requirement of the project to provide more immediate screening. As part of the proposed project, landscape maintenance is required for the life of the project and includes of removal of weeds (e.g., Plants with a rating of High on the California Invasive Plant Inventory). Cumulatively, due to the fuel maintenance requirements within the PV array as well as the landscape maintenance requirements, the potential for increased invasive species as a result of the project is low and would be less than significant.

Drainage Patterns

The potential for the proposed project to permanently alter existing drainage patterns is low. Specifically, per Section 4 of the Preliminary Hydrology and Drainage Basin Calculations (BergerABAM 2014), installation of the solar panels would not alter the existing flow paths. Project landscaping is proposed within County 100-year floodplain; however, plants are not proposed within the County floodway and plants have been set back approximately 15 feet from the centerline of the drainage bed in the northeastern corner of the site. The purpose of avoiding placement of plants within the drainage bed and setting the plants back approximately 15 feet is to reduce the potential for flow impediment. Due to the project design, which currently avoids impacts to the drainage systems, the potential for impacts to adjacent drainages patterns is low and would be less than significant.

Outdoor Lighting

The proposed outdoor lighting has a low potential to adversely affect potentially present special status species in the adjacent habitat, since the only lighting proposed is low-level outdoor convenience lighting at the permanent entry gate off Creelman Lane where urban uses would discourage nesting or foraging activities. In addition, the lighting at this location would be operated manually or activated via motion sensors, and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent residential properties.

Noise

Noise generated from operation of the proposed project has a low potential to adversely affect special status species in the adjacent grassland habitat, if present. Per the Noise Assessment (Ldn

Consulting, Inc. 2014), the proposed transformers and inverters could cumulatively have an unshielded noise rating as high as 81 dBA at 3.28 feet (1 meter). Although this cumulative noise generation exceeds the standard 60 dBA noise measure for nesting raptors and/or nesting special status avian species, no impacts to nesting raptors and/or special status avian species at the transformers and inverters are expected since no nests (raptors or other special status avian species) were detected within the project area. The proposed transformers and inverters are approximately 500 feet from the nearest property line. Cumulatively, the noise level at the nearest property line is estimated to decrease to 40.5 dBA. A raptor nest is located within a canopy of eucalyptus woodland, approximately 820 feet to the northeast of the transformers and inverters. Due to the distance between the nest and the transformers and inverters, the noise generated from the equipment is not expected to impact the nesting success of raptors in the eucalyptus trees. Two avian species were determined to have a potential to occur within the grassland habitat; northern harrier and grasshopper sparrow. Due to the lack of detection of either species during the biological surveys, the site is not expected to support a significant population or serve as a core nesting site. As a result, if present, the elevated noise levels are not expected to adversely affect the long-term success of the northern harrier and grasshopper sparrow; thus, noise generated from the proposed project would be less than significant.

Heat and Steam Emitted from the PV Modules

No impacts from steam would occur to special status avian species and/or birds protected under the federal MBTA since steam would not be generated from the proposed project, except on rare occasion as residual moisture evaporates off the face of the modules following rains and rapid daytime warming.

Per manufacture specification for the PV modules, solar glass, similar to the glass proposed as part of this project is intended to minimize reflected light and instead allow light to pass through to the cells (i.e., absorb light) (Solar World 2010). As a result of the absorption, the PV modules could get warm or hot to the touch, similar to any other structure exposed to the sun; however, the PV modules proposed as part of this project are not designed to emit heat. As a result, no impacts to special status avian species and/or birds protected under the federal MBTA would occur from heat if they were to fly over the modules since no uniquely focused heat would be emitted.

Light Reflected from the PV Modules

Based on the below discussion, reflected light (i.e., glare) potentially produced from the proposed project would have a less than significant impact on special status species and birds protected under the federal MBTA. The specific concerns with respect to glare has to do with development of inhospitable glare conditions that may affect habitat use of adjacent lands by special status species, or development of a site environment that may be mistaken by birds as open water or unobstructed sky, thus leading to collisions by birds on the solar panels.

Key elements to the analysis of panel reflectivity effects on wildlife are associated with the reflective properties of the panel surfaces, the spacing between panel arrays, the angle and direction of panel reflection as it pertains to wildlife receptors, and the hazard types and exposure risks to receptor wildlife potentially affected by the panels. To evaluate glare effects on wildlife, much of the assessment is drawn from tools and analytical methods originally developed for human impacts and applied for the present project in visual impact assessment of the project. These are described here and then extended to the specific wildlife resource impact concerns.

A glare analysis was conducted by the project team as part of the *Visual Impact Assessment* (KTU+A 2015). The analysis was performed using the Solar Glare and Flux Mapping Tools available online from Sandia National Laboratories. These tools are frequently used to identify glare hazards near airports as required by the Federal Aviation Administration. The analysis tools uses sunlight incident angles through the year by the entered site latitude and coordinate position relative to receptors in order to analyze the glare potential of panels as if they had the reflectivity of window glass. The tools further consider the angle of the reflective surface panels and assumes that each exposure point is at the same elevation as the panels' reflected light plane. These assumptions are highly conservative but are a good place to start the analysis. However, it is important to consider the factors not addressed in the glare toolkit. These include site topography and screening by slope, fencing, and vegetation between reflective surfaces and receptors, variation in reflective properties of analyzed surfaces, and scale and internal geometry of glare sources.

Using the level plane analysis where receptors and reflectors are on the same plane, the visual analysis shows that five locations on the south side of Creelman Lane may be exposed to enough reflected light to produce an after-image caused by sunlight reflected off the proposed solar panels. One location has the potential to produce an after-image for approximately thirty minutes in early mornings (approximately 6-6:30 AM) in late June; three points have the potential for approximately thirty minutes in early morning (approximately 6-6:30 AM) between April and September; and the fifth point has the potential for approximately thirty minutes in the evenings (approximately 5:15-5:45 PM) from April to September. An after-image is where the light reflectance is intense enough that it can leave a temporary bright spot in a portion of a person's view. An after-image makes it difficult for a person to look in the direction of the reflection as long as the reflectance point remains. Slight movements of the viewer often allow this after-image to pass quickly or the movement of the sun will redirect the location of the reflectance to a slightly changed perspective.

As was discussed in the *Visual Impact Assessment*, solar panels are inherently designed to capture rather than reflect incident light. As such, the reflectivity of the surface of the panels is curtailed by texture, coating, and empirical properties of the glass to direct light through the glass to the solar cells rather than to reflect light away from the panel surface. In addition, solar panels have a light absorbing black background below the panel glass. Per manufacture specification for PV modules, solar glass is intended to minimize reflected light and instead allow light to pass through to the solar cells (absorb light) and are less reflective than surrounding natural surfaces (Solar World 2010) as

well as standard glass surfaces (the type of surface analyzed in the Sandia Solar Glare and Flux tools). As a result, reflections from the panels are anticipated to be much less than the glare analysis indicated. For comparative purposes, soil reflects on average 30 percent of the applied light, vegetation reflects on average 50 percent, and snow reflects on average 80 percent of the applied light. PV modules have the potential to reflect on average less than ten percent of the applied light; however, this is dependent on the specific module and environmental factors such as cloud cover and site location. Solar World modules (similar to the proposed modules) reflect on average four percent of the applied light. Lastly, the adjacent topography including the large hillside to the west of the project site has the potential to block late evening sun from reaching the solar panels and greater angles of incidence, while the smaller hillside to the east of the project site has the potential to prevent reflected light from extending southeast of the project site.

A hillside comprised of several residential lots occurs south of Creelman Lane. These lots are landscaped while one lot supports equestrian uses. One lot to the southeast of the project site is undeveloped and comprised of non-native grasses with some small shrub species.

Although the glare analysis included within the *Visual Impact Assessment* was conducted to determine potential impacts to drivers along public roadways and private residential lots, this information is useful for evaluating potential impacts to avian species. When cumulatively considering the urban uses on the residential lots to the south of the project site, low design reflectivity of solar panels, and fencing and vegetative screening, the near ground surface receptors (i.e., wildlife that are not birds in flight, if present) are well buffered from glare effects. Adding to these physical and intensity factors, wildlife have the ability to behaviorally adjust to glare by slight adjustments to focal position in the same manner that people and animals avoid eye damage or temporary vision impairment by not staring at the sun.

For birds in flight, all of the same discussions above still apply; however, an additional concern exists. That is the potential for birds to mistakenly attempt to land on the panels believing the panels to be water, or for birds to attempt to fly through the panels believing them to be open sky as a result of the reflective properties of the panels. In many ways, birds in flight are benefited over more stationary wildlife receptors when it comes to glare as they experience rapidly changing angles of exposure and thus would perceive changes in reflectivity of the surfaces resulting from the geometric layout of the panel arrays and gaps between panels. Lower reflectivity of solar panel glass compared to other reflective surfaces makes panels less visually similar to pooled water and further improves detectability of panel geometries when viewed from all angles, including reciprocal angles of reflected light. Panel array spacing ensures that panel fields are observed as divided arrangements with both large breaks between rows as well as smaller breaks between individual panels in the arrays. The geometric divisions provide a visual indicator that the surface is not open water or open sky. The dividing of expansive panes of glass by grids is a regular and effective means to protect passerine birds from window collisions. For waterfowl that may seek to land on apparent reflective water bodies, the broader maintenance paths between panel arrays provides a highly visual feature

even from a considerable distance detectible by birds in flight. If birds were to approach the site from a direction that places the birds on an approach axis aligned with reflected glare, the panels would present to birds in flight similar to what people in a car experience as they pass by plastic tented row crops with a general geometric appearance to a reflective surface that changes in reflective intensity as the angle of observation changes. As the birds draw closer to the solar arrays as if to land or pass through the panels, the viewing angle would become less acute and reflection would diminish as the reflective angle is passed. The result would be clear unobstructed view of the panel arrays, providing birds the opportunity to alter course well before striking the panel arrays.

Collectively, the physical conditions of the panel materials, array layout and spacing, and topographic relief and screening combined with animal kinetic visual exposure and behavioral response to glare and visual cues are expected to limit exposure of wildlife, including sensitive wildlife, to harm resulting from glare. As a result, potential impacts would be less than significant.

I. The project would impact occupied burrowing owl habitat.

The project would not result in impacts to burrowing owl since the project site and BSA do not support potentially suitable habitat, this species was not detected onsite during the biological surveys, and this species has not historically been reported within the vicinity of the project (i.e., Grid L15) (Unitt 2004).

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

The project would not result in impacts to coastal cactus wren (*Campylorhynchus brunneicapillus*) since this species is not expected to occur onsite based on a lack of potentially suitable habitat.

K. The project would impact occupied Hermes copper habitat.

The project would not result in impacts to Hermes copper butterfly (*Lycaena hermes*) since this species is not expected to occur onsite based on a lack of potentially suitable habitat.

L. The project would impact nesting success of the following sensitive bird species through grading, clearing, fire fuel modification, and/or other noise generating activities such as construction: coastal cactus wren (*Campylorhynchus brunneicapillus*)*, coastal California gnatcatcher* (*Polioptila californica californica*)*, least Bell's vireo* (*Vireo bellii pusillus*)*, southwestern willow flycatcher* (*Empidonax traillii extimus*)*, tree-nesting raptors, ground-nesting raptors, golden eagle, or light-footed clapper rail* (*Rallus longirostris levipes*).

The project would not result in impacts to coastal cactus wren, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, golden eagle, or light-footed clapper rail since these species are not expected to occur onsite based on a lack of potentially suitable habitat.

One nest belonging to a red tailed hawk is located within the northeastern portion of the BSA (but outside of the project footprint) in mature eucalyptus woodland associated with the semi-rural

development. At the closest point, the nest is approximately 580 feet northeast of the limits of the proposed solar facility (i.e., security chain link fence). Noise generated from construction activities associated with the solar facility is not expected to affect the success of nesting activities at this location since the nest is at a distance greater than 500 feet from the site. The nest is located approximately 150 feet north of the limits of the landscape screening. Activities associated with installation of the landscaping are expected to be minimal and potentially limited to removal of invasive weeds via hand-held equipment (e.g., weed eaters), installation of container plants, and watering of the plants. These activities would result in elevated noise levels for a short period of time but would move in a linear direction (rather than remain at one location) due to the landscape screening footprint and thus, the noise generated from these activities are not expected to impact the nesting success of the adjacent nest.

The project does have the potential to affect ground-nesting raptors such as the northern harrier, if present onsite during construction from direct loss of habitat and/or construction noise that could affect the nesting success of this species if present within the BSA. Project impacts that could affect the nesting success of ground-nesting raptors such as the northern harrier would be considered significant. Since the project has the potential to affect the nesting success of ground-nesting raptors, the project mitigation measure listed within Section 3.4 is required to reduce the potential impact to a level below significance.

The project also has the potential to affect tree-nesting raptors such as the red-shouldered hawk and white-tailed kite, if present within the eucalyptus woodland adjacent to the solar facility (i.e., along Casteel Lane) as a result of noise generated from construction activities. Noise impacts that could affect the nesting success of these species would also be significant. Since the project has the potential to affect the nesting success of tree-nesting raptors, the project mitigation measure listed within Section 3.4 is required to reduce the potential impact to a level below significance.

3.3. Cumulative Impact Analysis

CEQA guidelines §15355 define cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts”.

A project cumulative impact study area was delineated to analyze the effects of past, present, and reasonably foreseeable future projects that could cumulatively contribute to the proposed project habitat and special status species impacts (e.g., raptors). The cumulative study area for the proposed project was defined as areas up to approximately one mile east, three quarters of a mile south, and three miles west (excluding the dense rural development) of the proposed project site toward State Route 67. The extent of the study area was based on potential cumulative impacts to the following: 1) non-native grassland and 2) the occurrence of raptors in the project region. Based on the above, there are 13 projects within the cumulative study area that are being evaluated for cumulative impacts; they include Sol Orchard Ramona Photovoltaic Solar Farm Project (Permit Type 3300; Permit 11-029), Cummings Ranch 1 (Permit Type 3810; Permit Number 03-005), Cummings Ranch

2 (Permit Type 3100; Permit Number 5344), Dekoven Project TPM (Permit Type 3200; Permit Number 21070), McDonald 1 (Permit Type 3800; Permit Number 09-005), McDonald 2 (Permit Type 3100; Permit Number 5560), McCandless TM (Permit Type 3100; Permit Number 5564), Lutheran Church (Permit Type 3300; Permit Number 08-017), Johnson TPM (Permit Type 3200; Permit Number 21160), Ramona Air Center 1 (Permit Type 3100; Permit Number 5554), Ramona Air Center 2 (Permit Type 3300; Permit Number 08-032), Ramona Air Center 3 (Permit Type 3301; Permit Number 71-396-01), and Downtown Ramona Wireless (Permit Type 3400; Permit Number 10-002).

All of the projects listed above, including the proposed project could potentially result in direct impacts to nesting avian species as a result of habitat removal and/or to avian species adjacent to the project as a result of construction period noise, if present during construction. All of the projects avoided significant impacts to sensitive breeding birds in accordance with Section 4.1L of the County Report Guidelines for Determining Significance [for] Biological Resources (County 2010b) and therefore the potential cumulative impact to nesting birds would not be considered cumulatively considerable. In addition, all projects must comply with the regulatory requirements of the federal MBTA and FGC §3503 and §3513 (discussed in Section 7.5 of this report). Therefore, the potential cumulative impact to nesting birds would not be considered cumulatively considerable since the project would comply with the County Report Guidelines for Determining Significance [for] Biological Resources (County 2010b) and the federal MBTA and FGC §3503 and §3513.

3.4. Mitigation Measures and Design Considerations

Since County Group 1 special status raptors could potentially nest onsite and/or within the habitat adjacent to the solar facility, the proposed project could result in impacts to the nesting success of these species (if present at the time of construction), which would be significant. To reduce the potential significant impact to a level below significance, the below project mitigation measure is recommended.

- To avoid impacts to County Group 1 special status ground and tree-nesting raptors that could potentially nest onsite and/or within the habitat adjacent to the solar facility, all clearing, grubbing, or grading of vegetation that has a potential to support active nests should not take place from January 15 through July 15, the "restricted work period". If avoidance of the breeding season is not feasible, clearing, grubbing or grading of vegetation may occur during the restricted work period if a qualified biologist conducts a focused survey for active nests within 48-72 hours prior to work in the area (within 300 feet of project construction) and determines the area to be free of nesting birds. If an active County Group 1 special status species nest were found onsite and/or within 300 feet of project construction, then all construction activities undertaken for the project should ensure that project activities generated from the project would not affect the nesting success of the species.

3.5. Conclusions

Significant impacts to special status species include potential impacts nesting raptors, if present onsite and/or adjacent to the site. Implementation of the project mitigation measure would reduce these impacts to less than significant.

4.0 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

4.1. Guidelines for Determination of Significance

An impact would be determined significant per CEQA if the project would result in the following condition.

> *The project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.*

4.2. Analysis of Project Effects

The following criteria (A-E) from the County of San Diego Guidelines for Determining Significance [for] Biological Resources (2010b) are evaluated below to provide evidence to support a determination of whether or not an impact is significant under the above guideline.

A. Project-related construction, grading, clearing, construction or other activities would temporarily or permanently remove sensitive native or naturalized habitat on or off the project site.

Project related construction of the solar facility and widening of the existing access road would permanently remove non-native grassland. This proposed impact would be considered significant; therefore, the project mitigation measures listed within Section 4.4 are required to reduce the potential impact to a level below significance.

The project footprint for the landscape screening has also been considered a permanent impact. Although this action would not require site contouring, native shrubs would be utilized, and it would not preclude the growth of non-native grasses, the landscape screening is not proposed as habitat-based mitigation and thus would not require long-term/in perpetuity maintenance. As a result, conversion of non-native grassland to landscape screening would be considered significant; therefore, the project mitigation measures listed within Section 4.4 are required to reduce the potential impact to a level below significance.

Permanent, direct impacts from erosion or non-native species intrusion on and/or offsite is not expected to occur due to project design, including landscape screening using native plant material and application of permeable soil-binding agents over the fire access roads and all unvegetated areas within the solar facility.

B. Any of the following would occur to or within jurisdictional wetlands and/or riparian habitats as defined by the USACOE, CDFW and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures;

construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity and abundance.

The project would not impact jurisdictional wetlands and/or riparian habitats since these resources do not occur on the project site or within the BSA.

C. *The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.*

As stated within Section 1.2 of this report, water for construction would be provided by existing fire hydrants along Creelman Lane. Alternatively, water for construction may be obtained from the two existing water wells (#WEL16712 and #W06123) and water tank located in the northwestern corner of the project site. The existing wells would also provide water required during the operation and maintenance of the facility including landscape irrigation. The project (i.e., use of the existing wells) would not impact groundwater-dependent habitat since these resources do not occur on the project site or within the BSA. Specifically, as stated in Section 1.4.7 of this report, while there are drainages that convey surface flow through the BSA, the drainages are not considered County RPO (or USACOE) wetlands due to the lack of a predominance of hydrophytic vegetation and hydric soils.

D. *The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term.*

As stated in Section 3.2 above, the project is a solar generation facility bound by chain link fence on land that has been leased since 1998 as an active palm tree nursery. The facility would require minimal long-term maintenance, which is expected to consist of approximately 56 trips to the site per year by approximately two to four staff. The project includes BMPs and landscape screening consisting of native shrubs including laurel sumac, toyon, and lemonadeberry, as well as smaller native shrubs with seasonal flowers, such as varieties of sage, *Ceanothus*, and deergrass. The project is not expected to have permanent indirect impacts through increased human access or competition/predation from domestic animals, pests, or exotic species since the proposed project is a solar facility and not a residential development that typically results in these types of edge effects. In addition, the project is not expected to alter drainage conditions. No impacts from permanent lighting are expected since low-level outdoor lighting is proposed at the permanent entry gate off Creelman Lane. The lighting at this location would be operated manually or activated via motion sensors, and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent residential properties. Although operational noise levels from the transformers and inverters could cumulatively be as high as 81 dBA at 3.28 feet (worst case scenario), no special status species are expected to nest or occupy the adjacent grassland.

Overall, the project would not adversely affect sensitive habitats through activities that increase edge effects as described above.

E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

As stated above, the project would not impact jurisdictional wetlands and/or riparian habitats since these resources do not occur on the project site or within the BSA; thus, wetland buffers are not required. Jurisdictional resources that are present within the BSA consist of non-wetland waters of the U.S./state and an isolated water of the State. As discussed within Section 5.2 of this report, the project would not result in impacts to these jurisdictional resources.

4.3. Cumulative Impact Analysis

As discussed in Section 3.3 above, 13 projects are located within the cumulative study area and are being evaluated for cumulative impacts. Of the projects within the cumulative project area, the following would result in impacts to non-native grasslands (and/or field pasture lands): IES/SDG&E Solar Energy Project – Ramona (5.1 acres); Sol Orchard-Ramona (18.81 acres); Dekoven Project TPM (3.51 acres); Lutheran Church (7.6 acres); and Ramona Air Center 1, 2, and 3 (4.48 acres). Therefore, the total known cumulative impact on non-native grassland habitat (and/or field pasture lands) is approximately 39.5 acres. Impacts to non-native grasslands (and/or field pasture) from the proposed project, Sol Orchard-Ramona, Dekoven Project TPM, and Lutheran Church are proposed to be mitigated at a minimum ratio of 0.5:1 at an offsite mitigation bank within the County. Mitigation has not been defined for the Ramona Air Center projects; however, it is anticipated that these projects would be required to mitigate the loss of non-native grassland and/or field pasture habitat types at a minimum ratio of 0.5:1 in accordance with the County Guidelines for Determining Significance [for] Biological Resources (County 2010b). Future projects impacting non-native grassland in the area would also be required to mitigate at established ratios consistent with the County Guidelines for Determining Significance [for] Biological Resources (County 2010b) or other applicable local regulations/plans. The project mitigation within the cumulative project area in combination with the proposed project mitigation measures listed within the below section would reduce impacts to less than cumulatively considerable.

4.4. Mitigation Measures and Design Considerations

As described in Section 2.0 above, onsite project impacts would result from conversion of habitat as a result of installation of the solar facility, widening of the entrance access path, and installation of landscape screening. The only offsite project element would be the trenching for the underground utility line from the interconnect pole and construction of the Dye Road Pathway within the ROW of Creelman Lane.

Impacts to non-native grassland are significant under CEQA since this community is regionally considered to be a sensitive habitat type primarily for foraging raptors; thus, implementation of habitat-based mitigation in accordance with Table 5, as well as the following mitigation measures, to reduce impacts to a level below significance would be required.

Impacts to the upland communities (intensive agriculture, eucalyptus woodland, and disturbed habitat), regardless of the classification as permanent or temporary, would not be considered significant or require project mitigation since these habitats are not regionally considered to have high conservation value.

Mitigation for significant impacts to non-native grassland is proposed via purchase of credits from a County approved offsite mitigation bank such as Daley Ranch at a ratio of 0.5:1. The proposed mitigation is consistent with the mitigation ratio established within the County Guidelines for Determining Significance [for] Biological Resources (County 2010b), which is 0.5:1.

Table 5. Required Mitigation and Applicable Ratios for Impacts to Sensitive Habitats

Habitat/Vegetation Community	Existing Acreage		Project Impacts (Acres)		Project Mitigation (Acres)		Impact Neutral
	Onsite	Offsite	Onsite	Offsite	Mitigation Ratio	Mitigation Required	
Non-native grassland	4.8	0.3	4.8[1]	0.3[2]	0.5:1	2.55	0.0
Intensive agriculture	12.1	<0.1	12.1[3]	<0.1[4]	N/A	N/A	0.0
Eucalyptus woodland	<0.1	0.0	<0.1[5]	0.0	N/A	N/A	0.0
Disturbed habitat	1.1	0.0	1.1	0.0	N/A	N/A	0.0
Urban/developed	<0.1	<0.1	<0.1	<0.1[2]	N/A	N/A	0.0
Total:	**18.0**	**3.0**	**18.0**	**0.3**		**2.55**	**0.0**

[1] Project impacts to non-native grassland would result from construction of the solar facility (permanent impact 3.4 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.3 acres).

[2] The project design includes the construction of a maximum 10-foot wide Dye Road Pathway within the ROW of Creelman Lane (offsite; 0.3 acres of impact to non-native grassland and <0.1 acre to urban/developed). Areas within the ROW disturbed during construction but not covered with DG (i.e., approximately 0.01-acre) would be hydroseeded for erosion control.

[3] Project impacts to intensive agriculture would result from construction of the solar facility (permanent impact 10.5 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.5 acres).

[4] Offsite impacts to intensive agriculture would result from trenching for the underground utility line from the interconnect pole (temporary impact).

[5] Project impacts to eucalyptus woodland would result from installation of landscape screening; however, no removal/trimming of eucalyptus woodland canopy is expected to be required.

Habitat-Based Pre-Construction Mitigation Measures

- Habitat-based mitigation for impacts to 5.1 acres of non-native grassland would be mitigated at a minimum ratio of 0.5:1 through the implementation of the following measure prior to acquisition of the project grading permit: 1) The project applicant would purchase 2.55 acres

of non-native grassland from an approved offsite mitigation bank such as Daley Ranch (at a ratio of 0.5:1).

Construction Period Design Measures

- Environmental training would be provided for contractors and construction personnel by the County approved project biologist prior to the start of construction work.
- A Stormwater Pollution Prevention Plan (SWPP) would be obtained for the project and Best Management Practices (BMPs) would be implemented per the SWPPP permit to ensure that offsite sedimentation does not occur.
- Install temporary orange environmental fencing (or similar) along the perimeter of the project footprint (as applicable) prior to the start of the construction activities. The fencing should be installed and maintained by the Contractor under direction of the project biologist and construction manager. Work activities should remain within the defined work areas.
- A monitoring biologist should be onsite during the initial clearing and grubbing of habitat. The biologist should be knowledgeable of upland and wetland biology and ecology.

4.5. Conclusions

Application of the County Guidelines for Determining Significance [for] Biological Resources (County 2010b) habitat mitigation ratio and purchase of habitat credits from an approved offsite mitigation bank, in addition to implementation of the project design measures listed above would reduce project impacts to a level below significance.

5.0 JURISDICTIONAL WETLANDS AND WATERWAYS

5.1. Guidelines for Determination of Significance

An impact would be determined significant per CEQA if the project would result in the following condition.

The project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means.

5.2. Analysis of Project Effects

The same criteria (B, C, and E) noted above under Section 4.2 are evaluated below for jurisdictional wetlands/waterways to provide evidence to support a determination of whether or not an impact is significant under the above guideline.

B. *Any of the following would occur to or within jurisdictional wetlands and/or riparian habitats as defined by the USACOE, CDFW and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity and abundance.*

As described above in Section 4.2, the project would not impact jurisdictional wetlands and/or riparian habitats since these resources do not occur on the project site or within the BSA. The project has been designed to avoid the OHWM associated with an isolated water of the state (a portion of Drainage 3). Specifically, no discharge of dredged or fill material would occur within the limits of the OHWM. However, the panels would span the two-foot wide drainage and thus, require notification to CDFW under FGC section 1602, since shading could be seen as a substantial change to a streambed. Additional construction period BMPs are recommended to ensure avoidance of the isolated streambed (listed above in Section 4.4 under General Mitigation Measures Prior to Construction). The potential direct impact to the isolated water of the state due to shading would be considered less than significant. Nonetheless, notification to CDFW under FGC section 1602 would be required prior to implementation of the project, as provided in the mitigation section below.

C. *The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of three feet or more from historical low groundwater levels.*

As described above in Section 4.2, the project activities would not cause a drawdown of the groundwater table to the detriment of groundwater-dependent habitats because the water wells would

only be used to supplement water needs for the project and would not exceed the typical water usage by a residential home and/or the production capacity of the well itself. Therefore, the project's potential impact to the groundwater table or groundwater-dependent habitats would be less than significant.

E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

As described above in Section 4.2, the project would not impact jurisdictional wetlands and/or riparian habitats since these resources do not occur on the project site and thus wetland buffers are not required.

5.3. Cumulative Impact Analysis

The project would not impact jurisdictional wetlands and/or riparian habitats since these resources do not occur on the project site. The project would result in shading over approximately 110 feet of isolated waters of the state as a result of spanning the PV solar panels across the two-foot wide drainage. Notification under FGC section 1602 would be required since shading could be considered as a substantial change to a streambed. However, the cumulative impact from shading 220 sq. ft. of non-native grassland is not expected to be cumulatively considerable.

5.4. Mitigation Measures and Design Considerations

Spanning approximately 110 linear feet of isolated waters of the state by the PV solar panels would require the following agreement from CDFW prior to acquisition of the grading permit:

- CDFW, California Fish and Game Code, Section 1602 agreement for alteration of a streambed.

5.5. Conclusions

Request of a streambed alteration agreement from CDFW and implementation of project mitigation measures discussed above in Section 4.4 would ensure compliance with regulatory agency permit requirements and ensure avoidance of potential impacts to the isolated water of the state.

6.0 WILDLIFE MOVEMENT AND NURSERY SITES

6.1. Guidelines for Determination of Significance

An impact would be determined significant per CEQA if the project would result in the following condition.

The project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

6.2. Analysis of Project Effects

The following criteria (A-F) from the County of San Diego Guidelines for Determining Significance [for] Biological Resources (2010b) are evaluated below to provide evidence to support a determination of whether or not an impact is significant under the above guideline.

A. The project would impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

As described above in Section 3.2, the project would reduce wildlife foraging habitat for raptors and other avian species, if present onsite and could potentially reduce nesting habitat for ground-nesting raptors as a result of converting non-native grassland to a solar facility, if present onsite. However, the project impacts are generally limited areas adjacent to relatively dense semi-rural development, and avoid the larger tracks of habitat to the east thereby continuing to allow species movement. In addition, the non-native grassland within the project site is considered to be low quality potential nesting habitat for ground-nesting raptors (i.e., northern harrier) due to proximity to the active palm tree nursery and residential development as well as for the grasshopper sparrow due to lack of species preferred habitat type. As a result, the project would have a less than significant impact on wildlife access to foraging and breeding habitat necessary for their reproduction.

The project would not result in adverse effects to water sources, such as seasonal or perennial drainages and/or ponds that are necessary for wildlife reproduction since none are present onsite or within the BSA.

B. The project would substantially interfere with connectivity between blocks of habitat, or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

The project would not result in long term impacts to wildlife movement through the project area since the project abuts relatively dense semi-rural development, and thus, any movement through the entire site is highly constrained and limited to avian species and/or urban tolerant meso-predators. In addition, the site lacks topography that typically facilitates wildlife movement including canyon

bottoms and/or ridgelines, as well as canopy coverage which is necessary for movement of medium to large sized mammals.

C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

The project includes security fencing around the perimeter of the solar facility. The fencing lies outside the County floodway and thus any movement of species through the entire SDG&E parcel would generally follow the natural drainages patterns. As a result, the project would have a less than significant impact on wildlife movement patterns.

D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

Construction of the solar facility would result in temporary elevated noise levels; however, use of the site as a wildlife corridor is highly constrained and limited to avian species and/or meso-predators. As described within Section 3.2 of this report, the project site is not expected to support a significant local or regional wildlife population; therefore, it is unlikely that project implementation would result in significant disruption of regional wildlife movement.

Low-level outdoor lighting would be installed at the entry gate off Creelman Lane. The lighting would be operated manually or activated via motion sensors, and would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. As a result, it is unlikely that project implementation would result in significant disruption of regional wildlife movement.

E. The project would not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

As previously stated, any movement through the site is limited to avian species or urban tolerant meso-predators due to proximity to rural development, current use of majority of the site as an active palm tree nursery, and lacks topography that typically facilitates wildlife movement including canyon bottoms and/or ridgelines, as well as canopy coverage which is necessary for movement of medium to large sized mammals. The proposed project landscaping would include native shrubs and grasses and would not preclude the growth of non-native grasses. Although new security fencing is proposed as part of the project, the proposed project fencing is located outside the floodway/floodplain and would be enclosed within existing fencing around the perimeter of the parcel. As a result, the proposed project is not expected to adversely affect an existing wildlife corridor or linkage.

F. The project would not maintain adequate visual continuity (i.e., long lines-of-site) within an existing wildlife corridor or linkage.

As previously stated, the project would not adversely affect existing wildlife corridors because the majority of the solar facility is proposed within the area currently used as an active palm tree nursery.

6.3. Cumulative Impact Analysis

There are no individual impacts to wildlife movement expected from the proposed project; therefore, no cumulative considerable impacts are expected.

The project does have the potential to affect individual nesting avian species as a result of habitat removal, if present onsite and/or adjacent to the project site as a result of construction noise, if present during construction. All of the projects within the cumulative impact study area avoided significant impacts to sensitive breeding birds in accordance with Section 4.1L of the County Report Guidelines for Determining Significance [for] Biological Resources (County 2010b), and, therefore, the potential cumulative impact to nesting birds would not be considered cumulatively considerable. In addition, all projects must comply with the regulatory requirements of the federal MBTA and FGC §3503 and §3513 (discussed in Section 1.5 of this report). Therefore, the potential cumulative impact to nesting birds would not be considered cumulatively considerable since the proposed project would also comply with the County Report Guidelines for Determining Significance [for] Biological Resources (County 2010b) as well as the federal MBTA and FGC (discussed within Section 7.2 below) via avoidance of the avian breeding season and if this were not feasible, implementation of measures to ensure that project activities would not affect the nesting success of the species.

6.4. Mitigation Measures and Design Considerations

There are no individual impacts to wildlife movement expected from the proposed project. The project could potentially impact individual nesting avian species if present onsite; therefore, implementation of the project mitigation measures in Section 3.4 above and 7.4 below would reduce potential impacts to a level below significance.

6.5. Conclusions

The project would not result in impacts to wildlife movement. However, significant impacts to nesting avian species, if present onsite and/or adjacent to the site could occur. Implementation of the project mitigation measures would reduce these impacts to less than significant.

7.0 LOCAL POLICIES, ORDINANCES, AND ADOPTED PLANS

7.1. Thresholds of Significance

An impact would be determined significant per CEQA if the project would result in the following condition.

> *The project would conflict with one or more local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.*

7.2. Analysis of Project Effects

The following criteria (A-L) from the County of San Diego Guidelines for Determining Significance [for] Biological Resources (2010b) are evaluated below to provide evidence to support a determination of whether or not an impact is significant under the above guideline.

A. *For lands outside of the MSCP, the project would impact coastal sage scrub (CSS) vegetation in excess of the County's 5% habitat loss threshold as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.*

The proposed project would not impact coastal sage scrub vegetation since this habitat type is not present onsite.

B. *The project would preclude or prevent the preparation of the subregional Natural Communities Conservation Planning Process (NCCP). For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.*

As previously described, the proposed project is primarily located within an area currently used as an active palm tree nursery and would not preclude connectivity between areas of high habitat values. As connectivity would not be affected by this project, the project would not preclude preparation of the North County MSCP Plan that is being prepared for the conservation of multiple species.

C. *The project will impact any amount of wetlands or sensitive habitat lands as outlined in the RPO.*

Implementation of the solar facility would not impact County RPO sensitive habitat lands since none occur onsite.

D. *The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Communities Conservation Planning Process (NCCP) Guidelines.*

The proposed project would not impact coastal sage scrub vegetation since this habitat type is not present onsite.

E. The project does not conform to the goals and requirements as outlined in any applicable Habitat Conservation Plan (HCP), Habitat Management Plan (HMP), Special Area Management Plan (SAMP), Watershed Plan, or similar regional planning effort.

The project would not preclude preparation of the North County MSCP Plan that is being prepared for the conservation of multiple species and no other regional planning efforts currently exist.

F. For lands within the Multiple Species Conservation Program (MSCP), the project would not minimize impacts to Biological Resource Core Areas (BRCAs), as defined in the Biological Mitigation Ordinance (BMO).

The project is not located within an adopted MSCP Plan Subarea; therefore, this evaluation criteria does not apply.

G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub Natural Communities Conservation Planning Process (NCCP) Guidelines.

The project would not preclude connectivity between areas of high habitat values since habitat connectivity will not be affected by this project.

H. The project does not maintain existing movement corridors and/or habitat linkages as defined by the Biological Mitigation Ordinance (BMO).

The project is not located within an adopted MSCP Plan Subarea; thus, there is currently no BMO for the project area; this evaluation criteria does not apply.

I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.

The project is not located within an adopted MSCP Plan Subarea; therefore, this evaluation criteria does not apply.

J. The project would reduce the likelihood of survival and recovery of listed species in the wild.

The project would not reduce the likelihood of survival and recovery of listed species in the wild since none are expected to occur onsite.

K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (Migratory Bird Treaty Act).

Nesting birds may be present within the project footprint during construction and could include such species as northern harrier, grasshopper sparrow, and western meadowlark. Impacts to active migratory bird nests, if present at the time of construction are prohibited under the federal MBTA and FGC §3503 and §3513. Since avian species could potentially nest in the onsite habitats, the

proposed project could result in impacts to active bird and/or raptor nests, if present at the time of construction under the federal MBTA and FGC §3503 and §3513; therefore, the project mitigation measure listed in Section 7.4 below is required.

L. The project would result in the take of eagles, eagle eggs or any part of an eagle (Bald and Golden Eagle Protection Act).

As previously discussed under Section 3.2 above, it is not anticipated that impacts to golden eagle would occur since nesting habitat is not present onsite and no active nests are known to be within 4,000 feet of the project site. In addition, no impacts to the bald eagle (*Haliaeetus leucocephalus*) are anticipated as a result of the project since there is no suitable nesting habitat onsite or within the BSA and this species has not historically been reported within the vicinity of the project site (i.e., Grid L15 of the San Diego Natural History Museum San Diego County Bird Atlas project; a grid represents nine sq. miles) (Unitt 2004). The closest confirmed breeding location of the bald eagle is approximately five miles from the project site (WRI 2013).

7.3. Cumulative Impact Analysis

The project does have the potential to affect individual avian species as a result of habitat removal, if present onsite and/or adjacent to the project site as a result of construction noise, if present during construction. Since all projects must comply with the regulatory requirements of the federal MBTA and FGC §3503 and §3513, impacts to nesting migratory birds would be avoided. In addition, mitigation of significant impacts to non-native grassland via purchase of credits from a County approved offsite mitigation bank such as Daley Ranch at a ratio of 0.5:1 would be consistent with the County Guidelines for Determining Significance [for] Biological Resources (County 2010b). Therefore, the project mitigation within the cumulative project area in combination with the proposed project mitigation measures listed within Section 7.4 below, as well as in Section 4.4 above, would reduce impacts to less than cumulatively considerable.

7.4. Mitigation Measures and Design Considerations

Since avian species could potentially nest in the onsite habitats, the proposed project could result in impacts to active bird and/or raptor nests, if present at the time of construction under the federal MBTA and FGC §3503 and §3513; therefore, implementation of the project mitigation measure listed below is required.

- To avoid impacts to nesting migratory birds, all clearing, grubbing, or grading of vegetation that have a potential to support active nests should not take place from January 15 through September 15, the "restricted work period". If avoidance of the nesting migratory bird breeding season is not feasible, clearing, grubbing or grading of vegetation may occur during the restricted work period if a qualified biologist conducts a focused survey for active nests

within 48-72 hours prior to work in the area and determines the area to be free of nesting birds. If an active bird nests were found, then all construction activities undertaken for the project should comply with regulatory requirements of the federal MBTA and FGC §3503 and §3513.

7.5. Conclusions

Implementation of the project mitigation measure listed above would ensure compliance with the federal MBTA and FGC §3503 and §3513. In addition, implementation of habitat-based mitigation as listed within Section 4.4 above would ensure compliance with the County Guidelines for Determining Significance [for] Biological Resources (County 2010b) and reduce impacts to natural communities to less than significant.

8.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

Implementation of the proposed project would result in direct impacts to non-native grassland. These impacts are considered significant and would require implementation of project mitigation to reduce these impacts to a level below significance. Implementation of the proposed project would also result in direct impacts to an isolated water of the state as a result of shade from panels spanning the narrow drainage over a distance of approximately 110 feet. The potential direct impact to the isolated water of the state due to shading would be considered less than significant per CEQA; however, shading could be seen as a substantial change to a streambed and thus would require notification to CDFW per Section 1602 of the FGC. Lastly, the project could result in impacts to nesting avian species if present onsite and/or adjacent to the site during project construction. Project impacts that could affect the nesting success of ground and tree-nesting raptors would be considered significant per the County, and, thus, require project mitigation measures to reduce impacts to a level below significance. In addition, impacts to active migratory bird nests, if present at the time of construction, are prohibited under the federal MBTA and FGC §3503 and §3513 and would require implementation of project mitigation measures to avoid impacts. Table 6 below is a summary of the project impacts and mitigation while Table 7 below is a summary of mitigation measures in relation to the County guideline numbers as listed within the Guidelines for Determining Significance [for] Biological Resources (2010b).

Table 6. Summary of Habitat/Vegetation Communities, Impacts and Mitigation Acreages

Habitat/Vegetation Community	Existing Acreage		Project Impacts (Acres)		Project Mitigation (Acres)		Impact Neutral
	Onsite	Offsite	Onsite	Offsite	Mitigation Ratio	Mitigation Required	
Non-native grassland	4.8	0.3	4.8[1]	0.3[2]	0.5:1	2.55	0.0
Intensive agriculture	12.1	<0.1	12.1[3]	<0.1[4]	N/A	N/A	0.0
Eucalyptus woodland	<0.1	0.0	<0.1[5]	0.0	N/A	N/A	0.0
Disturbed habitat	1.1	0.0	1.1	0.0	N/A	N/A	0.0
Urban/developed	<0.1	<0.1	<0.1	<0.1[2]	N/A	N/A	0.0
Total:	**18.0**	**3.0**	**18.0**	**3.0**		**2.55**	**0.0**

[1] Project impacts to non-native grassland would result from construction of the solar facility (permanent impact 3.4 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.3 acres).

[2] The project design includes the construction of a maximum 10-foot wide Dye Road Pathway within the ROW of Creelman Lane (offsite; 0.3 acres of impact to non-native grassland and <0.1 acre to urban/developed). Areas within the ROW disturbed during construction but not covered with DG (i.e., approximately 0.01-acre) would be hydroseeded for erosion control.

[3] Project impacts to intensive agriculture would result from construction of the solar facility (permanent impact 10.5 acres), widening of the entrance access path (permanent impact 0.1 acres), and installation of landscape screening (permanent impact 1.5 acres).

[4] Offsite impacts to intensive agriculture would result from trenching for the underground utility line from the interconnect pole (temporary impact).

[5] Project impacts to eucalyptus woodland would result from installation of landscape screening; however, no removal/trimming of eucalyptus woodland canopy is expected to be required.

Table 7. Summary of Mitigation Measures

Proposed Mitigation	Level of Significance after Mitigation	Guidelines Number(s)
The project applicant would purchase 2.55 acres of non-native grassland from an approved offsite mitigation bank such as Daley Ranch (at a ratio of 0.5:1).	Less than significant	3.2F; 4.2A
Notification to CDFW for a streambed alternation agreement under Section 1602 of the FGC.	Less than significant	5.2B
Avoidance of nesting bird breeding season or conduct pre-construction breeding bird survey to determine applicable measures.	Less than significant	3.2B; 3.2L; 7.2K

9.0 REFERENCES

AECOM. 2010. SDG&E Ramona Transmission Reliability Project, Reconnaissance Level Jurisdictional Waters Assessment. Keyser Road and Creelman Lane. 4pp. + Attachments.

_____. 2011. SDG&E Ramona Transmission Reliability Project, Creelman Lane Vernal Pool Habitat Mitigation and Photovoltaic Development Assessment. 4pp + Attachment.

_____. 2013 May 22. Discussion between an AECOM biologist Scott McMillan and Amanda Gonzales and Kyle Ince, both of Merkel & Associates, Inc., as well as SDG&E project staff members providing information regarding survey methodology used in assessing poential presence for vernal pools at the Creelman site.

Aerials Express. 2010. Aerial Photo Graphic

Air Photo USA. 2007. Aerial Photo Graphic

AMEC Earth & Environmental, Inc., Conservation Biology Institute, Onaka Planning & Economics, and The Rick Alexander Company. 2003a. Volume I, Final MHCP Plan. Prepared for the Multiple Habitat Conservation Program. Administered by SANDAG for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. 9 Sections + Attachments A and B.

American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington D.C.

_____. 2012. Fifty-Third Supplement to the American Ornithologists' Union Check-list of North American Birds [Internet]. Auk 129(3):573-588. Available from:http://www.aou.org/auk/content/129/3/0573-0588.pdf.

Baldwin BG, et al. 2011. Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California [Internet]. Jepson Flora Project, Jepson Online Interchange. University and Jepson Herbaria of the University of California at Berkely and Regents of the University of California. Available from: http://ucjeps.berkeley.edu/interchange/

Bauder E.T. 1993. Coastal San Diego Vernal Pool Species List. Compiled by E.T. Bauder, San Diego State University June 1993. This document is included as Appendix A to the Ramona Vernal Pool Conservation Study, Prepared for the County of San Diego, Prepared by TAIC and EDAW, Inc. January 2005.

BergerABAM 2014. Preliminary Hydrology and Drainage Basin Calculations for Grading & Improvements at IES/SDG&E Solar Energy Project – Ramona. Prepared January 2014, Revised August 2014.

_____. 2015 March. PDF and AutoCAD files of IES/SDG&E Solar Energy Project - Ramona.

California Department of Fish and Wildlife (CDFW). 2014a Jan. Special Vascular Plants, Bryophytes, and Lichens List [Internet]. Natural Diversity Database. Quarterly publication. 71 pp. Available from: https://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp

_____. 2014b Jan. State and Federally Listed Endangered & Threatened Plants of California [Internet]. Natural Diversity Database. 16 pp. Available from: https://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp

_____. 2013a. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. RareFind 3; GIS shapefile update, June 2013. Sacramento, California.

_____. 2013b Oct. State and Federally Listed Endangered & Threatened Animals of California [Internet]. Natural Diversity Database. 13 pp. Available from: https://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp

_____. 2011 Jan. Special Animals [Internet]. Natural Diversity Database. 50 pp + Endnotes. Available from: https://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp

California Native Plant Society (CNPS). 2012. Inventory of Rare and Endangered Plants (on-line edition, v7-10a) [Internet]. California Native Plant Society. Sacramento, CA. Available from: http://www.cnps.org/inventory.

City of San Diego. 2014. Water Conservation, a Branch of Public Utilities. Available from: http://www.sandiego.gov/water/conservation/kids/funfacts.shtml

County of San Diego. Ramona Community Planning Area. 2003. Ramona Design Guidelines. 72pp + Appendices.

_____. 2007. Resource Protection Ordinance (No. 9482) [Internet]. Adopted 1989, Amended 1991, 2007, 2011. 18pp. Available from: http://sdcounty.ca.gov/dplu/docs/res_prot_ord.pdf.

_____. 2009. Preliminary Draft North County MSCP Subarea Plan [Internet]. 147 pp + Appendices A through I. Available from: http://www.sdcounty.ca.gov/dplu/mscp/nc.html.

_____. 2010a Sep 15. Report Format and Content Requirements [for] Biological Resources, Fourth Revision [Internet]. Land Use and Environment Group; Department of Planning and Land Use; Department of Public Works. 41pp. + Attachments A through H. Available from: http://www.sdcounty.ca.gov/dplu/index.html.

_____. 2010b Sep 15. Guidelines for Determining Significance and Report Format and Content Requirements [for] Biological Resources, Fourth Revision [Internet]. Land Use and Environment Group; Department of Planning and Land Use; Department of Public Works. 33pp. + Attachments A through C Available from: http://www.sdcounty.ca.gov/dplu/docs/Biological_Guidelines.pdf.

_____. 2011 Aug 3. General Plan, Adopted [Internet]. 10 Chapters + Appendices. Available from: http://www.sdcounty.ca.gov/pds/generalplan.html.

_____. 2013a August 2. Project Pre-Application Summary Letter for the IES/SDG&E Ramona Solar Project (Record ID PDS2013-MPA-13-009). Department of Planning and Land Use. Attachment H Scope for Biological Resources.

_____. 2013b November 15. E-mail correspondence between Angela Williams of Independent Energy Solutions, Inc. and Michael Johnson County Project Manager providing direction to limit the field survey to the project impact area plus a 100-foot buffer.

Crother BI (ed.). 2000 (2001). Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding. SSAR Herpetological Circular 29.iii +82 pp.

Crother BI, Boundy J, Campbell JA, De Quieroz K, Frost D, Green DM, Highton R, Iverson JB, McDiarmid RW, Meylan PA, Reeder TW, Seidel ME, Sites JW Jr., Tilley SG, Wake DB. 2003. Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico: Update. Herpetological Review 2003, 34(3), 196-203.

Ehrlich, Paul R., David S. Dobkin, and Darryl Wheye 1988. How Fast and High Do Birds Fly? http://www.stanford.edu/group/stanfordbirds/text/essays/How_Fast.html

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual [Internet]. Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station. Vicksburg, Mississippi. 117 pp. Available from: http://el.erdc.usace.army.mil/wetlands/pdfs/wlman87.pdf.

Faulkner D, Klein M. 2004. San Diego's Sensitive Butterflies, A Workshop Focusing on Nine Local Species. 60 pp.

Google Earth™. 2012. V 6.2.2.6613 [Software]. Available from: http://www.earth.google.com. Accessed 2012-2014.

Hall ER. 1981. The mammals of North America. 2nd Edition. John Wiley & Sons. New York, New York. Two volumes. 1,181 pp.

Holland RF. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Resources Agency, Department of Fish and Game. Sacramento, California. 157 pp.

Klein MW, San Diego Natural History Museum. 2002. Butterflies of San Diego County [Internet]. Available from: http://www.sdnhm.org/research/entomology/sdbutterflies.html.

KTU+A. March 2015. Visual Impact Analysis for the IES/SDG&E Solar Energy Project – Ramona (County Record ID: MUP-14-013).

Merkel & Associates, Inc. June 2013. Biological Existing Conditions Technical Report for the Solar Energy Project. 91pp + Appendices

_____. December 2013. Biological Memo in response to Attachment H of the County of San Diego Pre-Application Letter dated August 2, 2013 for the IES/SDG&E Solar Energy Project – Ramona (Record ID. PDS2013-MPA-13-009).

Munsell® Color. 2000. Munsell® Soil Color Charts. Revised Edition. Munsell® Color, gretagmacbeth. New Windsor, New York.

National Weather Service, National Oceanic and Atmospheric Administration. Accessed 2012. Advanced Hydrologic Prediction Service. Available from: http://water.weather.gov/precip/

_____. 2013. Climate Data. Explanation of the Preliminary Monthly Climate Data (F6) Product. Station - Ramona Airport CA. February through May 2012. February through May 2013. Accessed May and June 2013. Available from: http://www.nws.noaa.gov/climate/getclimate.php?wfo=sgx

Oberbauer T, Kelly M, Buegge J. 2008, Revised 1996 and 2006. Draft Vegetation Communities of San Diego County [Internet]. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Holland RF, PhD., 1986. Available from: http://www.sdcounty.ca.gov/dplu/docs/Veg_Comm_SDCounty_2008.pdf.

Ogden, in conjunction with the Resource Agencies, Local Jurisdictions, and members of environmental, building and development communities [Internet]. 1998. Final Multiple Species Conservation Program MSCP Plan. 8 sections + attachments. Available from: http://dplu-mscp.sdcounty.ca.gov//2_bmo/2FinalMSCPProgramPlan.pdf.

Opler PA, Lotts K., Naberhaus T. coordinators. 2010. Butterflies and Moths of North America [Internet]. Bozeman, MT: Big Sky Institute. Available from: http://www.butterfliesandmoths.org/.

Rebman JP, Simpson MG. 2006. Checklist of the Vascular Plants of San Diego County, 4th Edition [Internet]. ISBN 0-918969-05-0. Available from: http://www.sdnhm.org/research/botany/sdplants/index.html.

Reiser CH. 2001 February. Rare Plants of San Diego County. Aquafir Press. 2001 edition. 299 pp.

San Diego Geographic Information Source (SanGIS). 1995. Vegetation. Originally created by the City of San Diego, The County of San Diego, and SANDAG. Ending date January 2010. Available from: http://www.sangis.org/.

_____. 2002. Soils Download (zip) updated 3/20/2002 [Internet]. Available from: http://www.sangis.org/.

_____. 2012. Vegetation. Publication date December 2012. Available from: http://www.sangis.org/.

San Diego Natural History Museum. 2010. San Diego County Plant Atlas Project [Internet]. Available from: http://sdplantatlas.org/.

SolarWorld. December 2010. Technical Bulletin. Issue: 1006. Reflectivity of SolarWorld Sunmodule plus photovoltaic modules. Available from: http://solarworld.com

Stebbins, RC. 2003. Peterson Field Guide: Western Reptiles and Amphibians. 3rd Edition.

Strand, R. G. 1965. Geologic map of California, Santa Ana Sheet (sixth printing 1992). State of California, The Resources Agency, Department of Conservation, Division of Mines and Geology, Sacramento, California.

TAIC and EDAW, Inc. 2005. Ramona Vernal Pool Conservation Study, Ramona California. Prepared for the County of San Diego. 44pp +Appendices.

Unitt P. 2004. San Diego County Bird Atlas. San Diego Natural History Museum.

U.S. Army Corps of Engineers (USACOE). 1997. Special Public Notice, Regional General Conditions to the Nationwide Permits. Los Angeles District, Regulatory Branch. November 25, 1997. Regional General Condition #1 – Vernal Pool Notification. Indicator Species for Vernal Pools.

_____. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. [Internet]. JS Wakeley, RW Lichvar, and CV Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. Available from: http://www.usace.army.mil/cecw/pages/reg_supp.aspx.

_____. 2008b Jun 26. Regulatory Guidance Letter No. 08-02, Subject: Jurisdictional Determinations.

_____. 2012. National Wetland Plant List. USACOE Los Angeles District. Available from: http://www.spl.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/WetlandDelineations.aspx

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2002. WETS Station: San Diego WSO Airport, San Diego County [Internet]. Available from: http://www.wcc.nrcs.usda.gov/climate/wetlands.html.

_____. 2006. Field Indicators of Hydric Soils in the United States, Version 6.0 [Internet]. GW Hurt and LM Vasilas (eds.). Fort Worth, Texas. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils. Availabile from: http://soils.usda.gov/use/hydric/.

U.S. Department of Agriculture (USDA), Soil Conservation Service and Forest Service. 1973. Part I, Soil Survey for San Diego Area, California. In Cooperation with Univserity of California Agriculture Experiment Station, United States Department of the Interior, Bureau of Indian Affairs, Department of the Navy, and United States Marine Corps.

U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACOE). 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook [Internet]. Available from: http://www.usace.army.mil/CECW/Documents/cecwo/reg/cwa_guide/jd_guidebook_051207final.pdf.

U.S. Fish and Wildlife Service (USFWS). 1996 April 19. Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods. 12 pp + appendices.

_____. 2005. Year 2005 Quino Survey Areas.

_____. 2013a Mar. Critical Habitat Portal [Internet]. Available from: http://criticalhabitat.fws.gov/.

_____. 2013b. Carlsbad Fish and Wildlife Office, GIS Division Species Occurrence Data Download (zip) updated February 2013 [Internet]. Available from: http://www.fws.gov/carlsbad/giswebpage/giswebpage.

_____. 2013c. March 14. Carlsbad Fish and Wildlife Office (CFWO). E-mail correspondence between Tony McKinney of Carlsbad Fish and Wildlife Office and Brad Kelly of Merkel & Associates, Inc. providing digital information in ArcView format of the Year 2005 Quino Survey Areas Map.

U.S. Geological Survey (USGS). 1998. California Quadrangles; California Digital Raster Graphics, 7.5 Minute (0) Series, Albers NAD 27. Teale Data Center. Sacramento, California.

Wildlife Research Institute (WRI). 2013. News Release. Third Pair of Bald Eagles found nesting in San Diego County. Available from: http://www.sandiegolovesgreen.com/third-pair-of-bald-eagles-found-nesting-in-san-diego-county/

Wilson DE, Reeder DM (eds). 2005. Mammal Species of the World. Johns Hopkins University Press. 2,142 pp. Available from Johns Hopkins University Press at: 1-800-537-5487 or (410) 516-6900, or http://www.press.jhu.edu/ or http://nmnhgoph.si.edu/msw/.

Zedler PH. 1987. The Ecology of Southern California Vernal Pools: A Community Profile. U.S. Fish & Wildlife Service Biological Report. 85 (7.11) 136 pp.

10.0 PREPARER(S) AND PERSONS/ORGANIZATIONS CONTACTED

Merkel & Associates, Inc.

Keith W. Merkel, County Approved CEQA Consultant, Report QA/QC Review

Amanda K. Gonzales, Senior Biologist/Project Manager, Primary Author, Field Biologist, Certified Wetland Delineator

Gina M. Krantz, Senior Biologist, Contributing Report Author and Report QA/QC Review, Field Biologist

Kyle L. Ince, Senior Biologist, Contributing Report Author, Lead Botanist, Certified Wetland Delineator

Antonette T. Gutierrez, Senior Biologist, Field Biologist

Brad M. Kelly, GIS Specialist, Graphics Preparation/Numeric Analyses

APPENDIX 1. FLORA SPECIES OBSERVED WITHIN THE SDG&E PARCEL

Habitat Types:

D = Disturbed or Developed Areas (Holland/Oberbauer Code 10000)
Disturbed Habitat (Holland/Oberbauer Code 11300)
Urban/Developed (Holland/Oberbauer Code 12000)
Intensive Agriculture (Holland/Oberbauer Code 18200)

G = Grasslands, Vernal Pools, Meadows, and other Herb Communities (Holland/Oberbauer Code 40000)
Non-native Grassland (Holland/Oberbauer Code 42200)

R = Riparian and Bottomland Habitat (Holland/Oberbauer Code 60000)
Freshwater (Holland/Oberbauer Code 64140)

W = Woodland (Holland/Oberbauer Code 70000)
Eucalyptus Woodland (Holland/Oberbauer Code 79100)

* = Denotes non-native flora species.
[1] = special status species (refer to Appendix 3 for details)

Scientific Name	Common Name	Habitat
DICOTYLEDONS		
Asteraceae - Sunflower Family		
Ambrosia psilostachya DC.	western ragweed	G
**Carduus pycnocephalus* L.	Italian thistle	G
**Cynara cardunculus* L.	Artichoke thistle, cardoon	G
*Erigeron canadensis (*L.) (Previously *Conyza canadensis* (L.) Cronq.)	horseweed	D
Heterotheca grandiflora Nutt.	telegraph weed	G
**Hypochaeris glabra* L.	smooth cat's-ear	G
**Hypochaeris radicata* L.	hairy cat's ear	G
**Lactuca serriola* L.	prickly lettuce	G
**Logfia gallica* (L.) Coss. & Germ. (Previously *Filago gallica* L.)	narrow-leaf filago	G
**Maticaria descoidea* (DC.) (Previously *Matricaria matricarioides* (Less.) Porter)	pineapple weed, rayless chamomile	G,D
**Silybum marianum* (L.) Gaertner	milk-thistle	G
**Sonchus oleraceus* L.	common sow thistle	G
Boraginaceae - Borage Family		
Amsinckia intermedia Fischer & C.A. Mey (Previously *Amsinckia menziesii* (Lehm.) Nelson & J. F. Macbr. var. *intermedia* (Fischer & C. Meyer) Ganders)	common fiddleneck	D
Brassicaceae - Mustard Family		
**Brassica nigra* (L.) Koch	black mustard	G,D
**Raphanus sativus* L.	wild radish	G
Caryophyllaceae - Pink Family		
**Cerastium glomeratum* Thuill.	mouse-ear chickweed	D
**Silene gallica* L.	common catchfly	D
**Spergularia bocconii* (Scheele) Merino	Boccone's sand-spurry	D
Spergularia sp.	unid. sand-spurry	D
**Stellaria media* (L.) Villars	common chickweed	D
Crassulaceae - Stonecrop Family		
Crassula connata (Ruíz Lopez & Pavón) A. Berger	dwarf stonecrop, pygmyweed	D
Fabaceae - Pea Family		
**Acacia* sp.	acacia	D
Acmispon americanus (Nutt.) Rydb. var. *americanus* (Previously *Lotus purshianus* (Benth.) Clements & E. G. Clements var. *purshianus*)	Spanish-clover	G,D
Lupinus bicolor Lindley	miniature lupine	G
**Medicago polymorpha* L.	California burclover	G
**Melilotus officinalis* (L.) Pall.	yellow sweetclover	G

Scientific Name	Common Name	Habitat
Geraniaceae - Geranium Family		
**Erodium botrys* (Cav.) Bertol.	long-beak filaree	G,D
**Erodium cicutarium* (L.) L'Hér.	red-stem filaree	G
Lamiaceae - Mint Family		
Lamium amplexicaule L.	henbit	G
Lythraceae - Loosestrife Family		
Lythrum californicum Torrey & A. Gray	California loosestrife	G
Montiaceae - Miner's Lettuce Family		
Calandrinia ciliata (Ruíz & Pavón) DC.	red maids	D
Myrtaceae - Myrtle Family		
**Eucalyptus* sp.	eucalyptus	D
Myrsinacea – Myrsine Family		
**Anagallis arvensis* L.	scarlet pimpernel	D
Onagraceae - Evening-Primrose Family		
Epilobium ciliatum Raf. ssp. *ciliatum*	willow herb	D
Polygonaceae - Buckwheat Family		
**Rumex crispus* L.	curly dock	G
MONOCOTYLEDONS		
Arecaceae - Palm Family		
**Phoenix canariensis* Chabaud	Canary Island palm	D
**Syagrus romanzoffiana* (Chamisso) Glassman	queen palm	D
Juncaceae - Rush Family		
Juncus bufonius L. var. *bufonius*	toad rush	D
Poaceae - Grass Family		
**Avena barbata* Link	slender wild oat	G
**Brachypodium distachyon* (L.) P. Beauv.	purple falsebrome	G,D
**Bromus diandrus* Roth	ripgut grass	G
**Bromus hordeaceus* L.	soft chess	G
**Bromus madritensis* L. ssp. *rubens* (L.) Husnot	red brome, foxtail chess	G
Distichlis spicata (L.) Greene	saltgrass	G
Elymus sp.	wild rye	D
Festuca microstachys Nutt. (Previously *Vulpia microstachys* (Nutt.) Benth.)	small fescue	G
**Festuca perennis* (L.) Columbus & J.P. Sm. (Previously *Lolium multiflorum* Lam. and *Lolium perenne* L.)	Italian ryegrass	G,D

Scientific Name	Common Name	Habitat
**Hordeum murinum* L. ssp. *leporinum* (Link) Arcang.	hare barley	G,D
**Lamarckia aurea* (L.) Moench	goldentop	D
**Polypogon monspeliensis* (L.) Desf.	annual beard grass	D

APPENDIX 2. FAUNA SPECIES OBSERVED OR DETECTED WITHIN THE PARCEL

Habitat Types:

D = Disturbed or Developed Areas (Holland/Oberbauer Code 10000)
Disturbed Habitat (Holland/Oberbauer Code 11300)
Urban/Developed (Holland/Oberbauer Code 12000)
Intensive Agriculture (Holland/Oberbauer Code 18200)

G = Grasslands, Vernal Pools, Meadows, and other Herb Communities (Holland/Oberbauer Code 40000)
Non-native Grassland (Holland/Oberbauer Code 42200)

R = Riparian and Bottomland Habitat (Holland/Oberbauer Code 60000)
Freshwater (Holland/Oberbauer Code 64140)

W = Woodland (Holland/Oberbauer Code 70000)
Eucalyptus Woodland (Holland/Oberbauer Code 79100)

FO= Fly Over

* = denotes introduced species

Abundance Codes (birds only):

A = Abundant: Almost always encountered in moderate to large numbers in suitable habitat and the indicated season.

C = Common: Usually encountered in proper habitat at the given season.

U = Uncommon: Infrequently detected in suitable habitat. May occur in small numbers or only locally in the given season.

R = Rare: Applies to species that are found in very low numbers.

"Numbers" indicate the number of individuals observed during the field survey work.

Status Codes (birds only):

M = Migrant: Uses the site for brief periods of time, primarily during the spring and fall months.

R = Year-round resident: Probable breeder on-site or in the vicinity.

S = Spring/summer resident: Probable breeder on-site or in the vicinity unless combined with transient status.

T = Transient: Uses site irregularly in summer but unlikely to breed. Not a true migrant and actual status often poorly known.

W = Winter visitor: Does not breed locally.

V = Casual vagrant: Not expected; out of normal geographic or seasonal range and by definition rare.

Common Name	Scientific Name	Habitat	Abundance	Status
BUTTERFLIES				
Pieridae (Whites and Sulfurs)				
white sp.		D	---	---
checkered (common) white	*Pontia protodice*	G	---	---
Lycaenidae (Gossamer-wing Butterflies)				
acmon blue	*Icaricia acmon acmon*	G	---	---
Nymphalidae (Brushfoots)				
west coast lady	*Vanessa annabella*	D	---	---
AMPHIBIANS				
Bufonidae (True Toads)				
western toad	*Anaxyrus* (=Bufo) *boreas*	G	---	---
Hylidae (Treefrogs and Relatives)				
Pacific treefrog	*Pseudacris regilla*	G	---	---
REPTILES				
Phrynosomatidae				
western fence lizard	*Sceloporus occidentalis*	D	---	---
BIRDS				
Cathartidae (American Vultures)				
turkey vulture	*Cathartes aura*	FO,D	C	T, R
Accipitridae (Hawks and Harriers)				
white-tailed kite	*Elanus leucurus*	FO	C	R
red-shouldered hawk	*Buteo lineatus*	FO,U	C	R
red-tailed hawk	*Buteo jamaicensis*	FO	C	R, M, W
Columbidae (Pigeons and Doves)				
mourning dove	*Zenaida macroura*	G	C	R
Corvidae (Jays, Magpies, and Crows)				
American crow	*Corvus brachyrhynchos*	G	A	R
Hirundinidae (Swallows)				
northern rough-winged swallow	*Stelgidopteryx serripennis*	FO	C	M, S

Common Name	Scientific Name	Habitat	Abundance	Status
Aegithalidae (Bushtit)				
bushtit	*Psaltriparus minimus*	G	C	R
Mimidae (Mockingbirds and Thrashers)				
northern mockingbird	*Mimus polyglottos*	G	C	R
Emberizidae (Sparrows, Blackbirds and Relatives)				
Savannah sparrow	*Passerculus sandwichensis*	FO	C	M, W
Icteridae (Blackbirds, Meadowlarks, Orioles, and Relatives)				
red-winged blackbird	*Agelaius phoeniceus*	D	C	R
MAMMALS				
Sciuridae (Squirrels)				
California ground squirrel	*Spermophilus beecheyi nudipes*	G	---	---
Leporidae (Hares and Rabbits)				
desert cottontail	*Sylvilagus audubonii sanctidiegi*	G	---	---

APPENDIX 3. OCCURRENCE OR POTENTIAL OF SPECIAL STATUS SPECIES ON THE PROJECT SITE

Key to abbreviations:

Federal Endangered Species Act (ESA)
FE = Federally-listed as Endangered
FT = Federally-listed as Threatened
FPE = Federally proposed for listing as Endangered
FPT = Federally proposed for listing as Threatened
FPD = Federally proposed for delisting
FC = Federal candidate species
SC = Species of concern
Delisted species are monitored for 5 years

California Endangered Species Act (CESA)
SE = State-listed as Endangered
ST = State-listed as Threatened
SCE = State candidate for listing as Endangered
SCT = State candidate for listing as Threatened
SCD = State candidate for de-listing
SR = California Rare Species

California Natural Diversity Database (CNDDB)
SP = Special Plant
SA = Special Animal

California Department of Fish and Game (DFG)
SSC = Species of Special Concern
FP = California fully protected species
WL = Watch List

California Rare Plant Rank (CRPR)
List 1A = Plants presumed extinct in California
List 1B = Plants rare or endangered in California and elsewhere
List 2 = Plants rare or endangered in California, but more common elsewhere
List 3 = Plants about which more information is needed (a review list)
List 4 = Plants of limited distribution (a watch list)
Threat level
0.1-Seriously endangered in California (high degree/immediacy of threat)
0.2-Fairly endangered in California (moderate degree/immediacy of threat)
0.3-Not very endangered in California (low degree/immediacy of threats/ no current threats known)

Multiple Species Conservation Program (MSCP)
NE = Narrow Endemic
CS = Covered Species
CP = Critical Population

County of San Diego
Plant List A = Plants rare, threatened or endangered in California and elsewhere
Plant List B = Plants rare, threatened or endangered in California but more common elsewhere
Plant List C = Plants which may be quite rare, but need more information to determine their true rarity status
Plant List D = Plants of limited distribution and are uncommon, but not presently rare or endangered
Animal Group 1 = Animals rare, threatened or endangered in California and elsewhere
Animal Group 2 = Animals rare, threatened or endangered in California but more common elsewhere

Potential to Occur On-site
NE = Not Expected
LP = Low Potential
MP = Moderate Potential
HP = High Potential

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
PLANTS			
Acanthomintha ilicifolia San Diego thornmint [6]	ESA: FT CESA: SE CNDDB: SP CRPR List: 1B.1 MSCP: NE, CS Cnty of SD List: A	Native, annual herb that has a distinctive microhabitat, preferring grassy openings in chaparral or sage scrub on friable or broken clay soils; ranges in elevation from 10-960 meters (33-3,150 ft); blooming period April-June.	No; NE; Species preferred friable or broken clay soil substrate is not present onsite. Sought but not found.
Ambrosia pumila San Diego ambrosia	ESA: FE CNDDB: SP CRPR List: 1B.1 MSCP: NE, CS Cnty of SD List: A	Native, perennial, rhizomatous herb that prefers creeks beds, seasonally dry drainages, and floodplains; usually a protective tree canopy is absent and it grows on the periphery of willow woodland; ranges in elevation from 20-450 m (66-1,476 ft.); blooming period April-October.	No; NE; No suitable habitat.
Brodiaea filifolia thread-leaved brodiaea	ESA: FT CESA: SE CNDDB: SP CRPR List: 1B.1 MSCP: NE, CS Cnty of SD List: A	Perennial bulbiferous herb that prefers vernally moist grasslands and the periphery of vernal pools are the typical locales where this species has been found. Species such as *Sisyrinchium bellum* and *Nassella pulchra* may grow nearby; elevation 25-1,220 meters (82-4,000 ft.); blooming period March-June.	No; LP; Sought but not found.
Brodiaea orcuttii Orcutt's brodiaea [6]	CNDDB: SP CRPR List: 1B.1 MSCP: CS Cnty of SD List: A	Native, perennial, bulbiferous/corm sprouting herb that prefers vernally moist grasslands, mima mound topography, and the periphery of vernal pools, but will occasionally grow on streamside embankments, and has also been found in mesic grasslands and openings within chaparral, at elevations ranging from 30-1,692 meters (98-5,551 ft.); blooming period May-July.	No; LP; 30+ year-old CNDDB record occurs 1.5 mi. south of BSA; sought but not found.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Centromadia (=Hemizonia) parryi ssp. *australis* southern tarplant [6]	CNDDB: SP CRPR 1B.1 Cnty of SD List: A	Native, annual herb that occurs in mesic areas within grasslands, alkaline locales, vernal pools, and salt marsh; blooming period May-November.	No; LP; Sought but not found.
Clarkia delicate delicate/campo clarkia	CNDDB: SP CRPR List: 1B.2 Cnty of SD List: A	Native, annual herb that prefers the periphery of oak woodlands and cismontane chaparral, typically in more mesic areas, at elevations ranging from 235-1,000 meters (771-3,281 ft.); blooming period April-June.	No; NE: CNDDB record occurs for this species approx. 2 mi. south of BSA; no suitable habitat onsite of adjacent to the site.
Convolvulus simulans small-flowered bindweed/ small-flowered morning glory	CNDDB: SP CRPR List: 4.2 Cnty of SD List: D	Native, small annual grows on friable clay soils which are typically devoid of shrubs, in openings in chaparral, sage scrub, and grasslands; blooming period March-July.	No; NE; Sought but not found.
Eryngium aristulatum var. *parishii* San Diego button celery	ESA: FE CESA: SE CNDDB: SP CRPR List: 1B.1 MSCP: CS Cnty of SD List: A	Annual/perennial herb found in vernal pools or vernally moist coastal scrub, valley and foothill grassland adjacent to vernal pools; elevation 20-620 meters (65-2,035 ft.); blooming period April-June.	No; NE; Known from vicinity; sought but not found.
Harpagonella palmeri Palmer's grappling hook [6]	CNDDB: SP CRPR List: 4.2 Cnty of SD List: D	Native, inconspicuous annual, herb that typically occurs on clay vertisols with open grassy slopes in open sage scrub or chaparral, at elevations ranging from 20-955 meters (65-3,133 ft.); blooming period March-May.	No; NE; Preferred habitat is not present onsite.
Holocarpha virgata ssp. *elongata* graceful tarplant [6]	CNDDB: SP CRPR List: 4.2 Cnty of SD List: D	Native/California endemic, annual herb that frequents annual and perennial grasslands; usually shrub cover is not well developed, with a heavy incidence of invasive non-native grasses and herbs; blooming period May-November.	No; LP; Sought but not found.
Hordeum intercedens little barley/ vernal barley [6]	CNDDB: SP CRPR 3.2 Cnty of SD List: C	Native, annual herb/grass that typically occurs in saline flats or depressions within grasslands or vernal pools, as well as coastal dunes and scrub; blooming period March-June.	No; LP; Sought but not found.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Navarretia fossalis spreading prostrate navarretia/ Moran's navarretia/ spreading navarretia [6]	ESA: FT CNDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Native, small, annual herb that prefers vernal pools and swales, and occurs in chenopod scrub, marshes, swamps, and playas; blooming period April-June.	No; NE; No suitable habitat.
Quercus engelmannii Engelmann oak	CNDDB: SP CRPR List: 4.2 Cnty of SD List: D	Native, deciduous tree that occurs in chaparral, cismontane and riparian woodland, and grasslands, at elevations ranging from 50-1,300 meters (164-4,265 ft.); blooming period March-June.	No; NE: Sought but not found.
Saltugilia (=*Gilia*) *caruifolia* caraway-leaf gilia/ caraway-leaved gilia/ caraway-leaved woodland-gilia [6]	CNDDB: SP CRPR 4.3 Cnty of SD List: D	Native, annual herb that occurs in sandy openings within lower montane coniferous forest and high desert chaparral, at elevations ranging from 1,400-2,300 meters (4,593-7,546 ft.); blooming period May-August.	No; NE; No suitable habitat.
INVERTEBRATES			
Branchinecta sandiegonensis San Diego fairy shrimp [6]	ESA: FE CNDDB: SA Cnty of SD Group: 1 MSCP: NE (Cnty of SD), CS	Small, seasonal claypan puddles and vernal pools <30 cm deep. Most commonly found in a 50 km wide strip of San Diego county associated with coastal sage scrub and annual grasslands.	No; NE; No indicator species for vernal pools as listed on the USACOEs Indicator Species for Vernal Pools (1997) were found onsite during the surveys performed by M&A or AECOM (AECOM 2010 and 2011). In addition, San Diego fairy shrimp are not expected to be present within the BSA based on the following: 1) no Brachiopod species were observed in areas that supported water during any of the surveys performed by M&A or AECOM; 2) review of site by M&A and AECOM biologists (AECOM

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
			2013); 3) high-velocity flows within the main channel of the creek; and 4) lack of ponded water throughout many of the depressions during the 2012 and 2013 surveys and lack of brachiopod species in those areas that did support water.
Danaus plexippus monarch butterfly [6]	CNDDB: SA Cnty of SD Group: 2	This species occurs throughout North America, and migrates to wintering sites in central Mexico and along the California coast generally from August to October (Opler et al. 2006). This butterfly utilizes open habitats including fields, meadows, weedy areas, marshes, and roadsides. Caterpillar host plants include milkweeds (*Asclepius* sp.), and adult nectaring resources include a variety of flowers. In southern California, this butterfly may breed year round.	No; NE; No historic breeding locations within vanity and not found onsite.
Euphydryas editha quino quino checkerspot butterfly	ESA: FE CNDDB: SA Cnty of SD Group: 1 MSCP: NE (Cnty of SD only)	Coastal habitats of sage scrub and chaparral; more inland, can be found in open meadows adjacent to sage scrub, chaparral and oak woodland, as well as juniper woodland and semi-desert scrub; habitats must have open areas with low growing and sparse vegetation; other suitable habitat conditions include dirt trails/roads, especially along hilltops, and clay soils and cryptogrammic crusts, which favor host plant growth; primary caterpillar host plants include *Plantago erecta* at lower elevations and *P. patagonica* and *Antirrhinum coulterianum* at higher elevations; additional host plants may include *Cordylanthus rigidus* and *Castilleja exserta*; adults nectar on low growing annuals; adult flight period typically Mar-Apr, depending on winter rainfall and temperatures.	No; NE; Site occurs outside of the USFWS recommended survey area and the onsite grasslands are dense with limited necatring sources.
AMPHIBIANS			

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Anaxyrus californicus (=*Bufo californicus*) arroyo toad	ESA: FE CNDDB: SA DFG: SSC MSCP: NE, CS Cnty of SD Group: 1	This species utilizes shallow pools, open sand, and gravel flood terraces of intermittent to perennial streams, and may aestivate in adjacent upland communities within approximately 1.2 kilometers.	No; NE; No suitable habitat onsite.
Spea hammondii western spadefoot toad [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2 MHCP: CS	Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains, typically within grassland habitat.	No; NE; No suitable habitat.
REPTILES			
Anniella pulchra pulchra silvery legless lizard [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Shows a preference for areas of leaf litter and loose soil along washes, beach sand dunes, open scrub and woodland, and sandy benches along alluvial fans.	No; NE; No suitable habitat onsite.
Aspidoscelis hyperythra orange-throated whiptail [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2 MSCP: CS	This species is a diurnal reptile from early spring to late summer that prefers washes and other sandy areas with patches of brush and rocks in coastal scrub and chaparral.	No; NE; No suitable habitat onsite.
Charina (=*Lichanura*) *trivirgata roseofusca* coastal rosy boa	CNDDB: SA Cnty of SD Group: 2 USFS: S	This species ranges from the foothills of the San Gabriel and San Bernardino Mountains south through San Diego County into Sierra San Pedro Martir, Baja California, at elevations ranging from sea level to 2,070 meters (6,790 feet) (USFS 2006). This primarily nocturnal snake occurs in coastal sage scrub and chaparral-dominated communities that contain large rocks and boulders for cover and refuge, often near permanent or intermittent streams.	No; NE; There is no suitable habitat for this species onsite or adjacent to the project site.
Coleonyx variegatus abbotti San Diego banded gecko [6]	CNDDB: SA Cnty of SD Group: 1	This species is a primarily nocturnal reptile that prefers areas of rock outcrop within sage scrub and chaparral, and hides in burrows or under surface objects during the day. This reptile breeds generally during Apr and May, and hibernates through the winter, generally from Nov to Feb.	No; NE; No suitable habitat onsite.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Diadophis punctatus similis San Diego ringneck snake	CNDDB: SA Cnty of SD Group: 2	Often encountered during the day under boards and flat rocks in open, moist, relatively rocky areas within chaparral and grassland habitats.	No; LP; No suitable.
Plestiodon (=Eumeces) skiltonianus interparietalis Coronado Island skink	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Diurnal species that actively forages through leaf litter and dense vegetation in a variety of habitats including grasslands, sage scrub, open chaparral and various woodlands including oak, pine, juniper, and riparian.	No; LP; No suitable habitat onsite or adjacent to the site.
Phrynosoma coronatum (*blainvillii*) coast (San Diego) horned lizard [6]	CNDDB: SA DFG: SSC MSCP: CS Cnty of SD Group: 2	This species is endemic to southern California and northern Baja California, Mexico (USFS 2006b). This diurnal lizard occurs in a variety of habitats, including coastal sage scrub, chaparral, grassland, coniferous forest, oak woodland, riparian, and the margins of higher elevation desert, with an abundance of open areas for basking and obtaining prey (i.e., native ants and insects), and loose, fine soils that provide camouflage and allow burrowing for protection from predators.	No; LP; No suitable habitat.
BIRDS			
Accipiter cooperii Cooper's hawk [6]	CNDDB[4]: SA DFG: WL MSCP: CS Cnty of SD Group: 1	Year-round resident of San Diego County that frequently nests in dense stands of live oak, riparian deciduous or other forest habitats located near water and along broken woodland habitat and edges, where it can perch under cover and hunt prey, including amphibians, reptiles, and small birds and mammals.	No; NE. No suitable nesting habitat onsite.
Agelaius tricolor tricolored blackbird [6]	DFG: SSC CNDDB[4]: SA Cnty of SD Group: 1 MSCP: CS	Year-round resident that nests in colonies preferably in cattail marshes and forages in nearby grassland, pastures or agricultural fields. Breeds from mid-March through July. Wanders nomadically in flocks during the winter but is still often found near nesting sites.	No; NE for nesting; No suitable nesting habitat onsite. Species could forage within the grassland habitat onsite if present within the vicinity. However, this species is previously only known to occur within the vicinity (i.e., Grid L15 of the SDHNM San Diego County Bird Atlas project; a gird represents nine sq. miles) as a non-breeding visitor (Unitt 2004).

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Ammodramus savannarum grasshopper sparrow [6]	CDFG: SSC CNDDB[4]: SA Cnty of SD Group: 1	Sedentary, year-round resident restricted to native grassland with a mix of grasses and forbs for foraging and nesting, although lack of habitat has forced it into areas of non-native grassland. Builds a nest of grasses and forbs in a slight depression in ground, hidden at base of an overhanging clump of grasses or forbs: breeding occurs between mid-April to mid-July. Can be difficult to detect in the winter and may be a partial migrant.	No; MP; Breeding for this species has been confirmed within the vicinity of the project (i.e., Grid L15) (Unitt 2004). However, the onsite grassland is dense and dominated by tall, non-native annuals. In addition, the preferred grassland habitat for this species usually has some shrubs typical of coastal sage scrub which are not present within the BSA.
Aquila chrysaetos golden eagle [6]	CNDDB[4, 5]: SA DFG: FP, WL MSCP: NE, CS Cnty of SD Group: 1	Year-round resident that nests primarily on cliff ledges or trees on steep slopes, during the breeding season generally from early Feb through April, near open habitats, such as grasslands, oak savannahs, and open shrublands, for foraging.	No; NE to nest; No suitable nesting habitat onsite. Species has not historically been reported within the vicinity of the project (i.e., Grid L15) (Unitt 2004).
Athene cunicularia burrowing owl [6]	CNDDB[4, 5]: SA DFG: SSC MSCP: CS North Cnty MSCP: NE South Cnty MSCP: NE Cnty of SD Group: 1	Occurs in open dry grasslands, agricultural, rangelands and desert habitats. Inhabits grass, forb and shrub stages of pinyon and ponderosa pine habitats as well as airports, golf courses, and vacant urban lots.	No; NE to nest; Sought but not detected (i.e., bird or evidence of bird). Onsite grasses are dense and there is a lack of burrows. Species has not historically been reported within the vicinity of the project (i.e., Grid L15) (Unitt 2004).
Branta canadensis Canada goose [6]	MSCP: CS Cnty of SD Group[5]: 2	Winter visitor to the San Diego County area. Prefers freshwater ponds and wetlands, moist grasslands, agriculture land, and meadows.	No; NE; No suitable habitat and no record of species occurring with (i.e., Grid L15) (Unitt 2004).

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Buteo lineatus red-shouldered hawk	Cnty of SD Group: 1	Year-round resident that has adapted to loss of habitat. Once found primarily in riparian woodlands it has expanded into rural residences, eucalyptus woodlands, and orchards.	Yes; Two perched on power line along Casteel Ln. No potential to nest habitat onsite.
Buteo regalis ferruginous hawk [6]	DFG: WL CNDDB[5]: SA MSCP: CS Cnty of SD Group[5]: 1	Rare winter visitor, mainly from October to March, that occurs in dry, open habitats, typically grasslands.	No; LP; Sought but not found.
Spinus (=Carduelis) lawrencei Lawrence's goldfinch	CNDDB[4]: SA	Year-round resident but highly nomadic. Will move to where food (seeds) are available. It prefers to nest in mountain woodlands often adjacent to a creek or meadow.	No; NE; No suitable habitat.
Cathartes aura turkey vulture [6]	Cnty of SD Group: 1	Year-round resident, that uses extensive open areas with protective roost sites provided by large trees, snags, thickets, shrubs. Nests in the crevices of rock outcrops; they typically lay their eggs on bare ground, with little or no construction of an actual nest; hunts from the air or by perch, aided by the sense of smell, and feeds primarily on carrion.	Yes; One observed onsite foraging within a pile of discarded palm leaves and several observed flying over the project site. NE to nest onsite; No suitable nesting habitat onsite. The site likely serves as dispersal grounds and foraging only.
Chondestes grammacus lark sparrow	CNDDB[4]: SA	Around residents of San Diego County and considered a characteristic bird of the County's inland valleys. Species has adapted to agricultural areas including orchards pastures and horse corrals, as these areas offer expanses of bare dirt and low weeds for foraging. They are also commonly associated with areas that support ample grassland with scattered trees or shrubs for nesting. Nesting locations include trees, shrubs, or on the ground usually at the base of a shrub.	No; NE; No suitable habitat.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Circus cyaneus northern harrier [6]	CNDDB[4]: SA DFG: SSC MSCP: CS Cnty of SD Group: 1	Yearlong and winter resident in California that uses flat, or hummocky, open areas of tall, dense grasses, moist or dry shrubs, and edges for nesting, cover, and feeding; hunts by making low, quartering flights above open ground, and dives from flight or hover; feeds mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, and insects; nests built of a large mound of sticks in wet areas, and a smaller cup of grasses on dry sites; breeds Apr-Sep, with peak activity Jun-Jul.	No; MP; Suitable habitat.
Elanus leucurus white-tailed kite [6]	DFG: FP CNDDB[4]: SA Cnty of SD Group: 1	Year-round resident; prefers riparian woodland, oak groves or sycamore groves adjacent to grasslands for foraging. Diet consists of the California vole or meadow mouse. Nests mid-February though June.	Yes; ~Five observed on power line but no suitable nesting onsite; No suitable nesting habitat onsite. Onsite trees are limited to palm trees. Most palm trees are in containers while the trees along the perimeter of the site are in the ground; these palm trees are uprooted as necessary and sold.
Eremophila alpestris actia California horned lark [6]	DFG: WL CNDDB: SA Cnty of SD Group: 2	Grasslands, disturbed areas and open habitats with sparse, low vegetation. Horned larks generally build their nests on the ground, digging or selecting a small hollow so the nest is sunken slightly below ground level.	No; LP; No suitable habitat onsite.
Haliaeetus leucocephalus bald eagle	ESA: Delilsted CESA: CE DFG: FP CNDDB: SA MSCP: CS Cnty of SD Group: 1	Winter visitor to lakes in the foothill mountains; normally observed between October and March. This bird tends to utilize mixed conifer forest for wintering activities (i.e., foraging, perching, and roosting) adjacent to lakes that provide an abundance of prey (i.e., fish or waterbird prey). A few individuals have remained into summer; confirmed breeding is limited to approximatly three locations in San Diego County.	No; NE to nest; No suitable nesting habitat onsite. Species has not historically been reported within the vicinity of the project (i.e., Grid L15) (Unitt 2004).

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Lanius ludovicianus loggerhead shrike [6]	CNDDB[4]: SA DFG: SSC Cnty of SD Group: 1	Year-round resident of San Diego County. Largest population are located in Anza Borrego Desert and up the east slopes of the mountains; also found in suitable habitat along the coast. Prefer open habitats with bare ground and shrub and/or tree cover for nesting and perching.	No; NE; No suitable habitat onsite. Onsite trees are limited to palm trees. Most palm trees are in containers while the trees along the perimeter of the site are in the ground; these palm trees are uprooted as necessary and sold.
Larus californicus California gull [6]	DFG: WL CNDDB[4]: SA Cnty of SD Group: 2	Winter visitor that frequents open ocean, beaches, bays, estuaries, lagoons, as well as inland lakes.	No; NE; Not detected onsite or flying over the site.
Picoides nuttallii Nuttall's woodpecker	CNDDB[4]: SA	Year-round resident; typically uses a mix of deciduous riparian and adjacent oak habitats, but is also using urban landscaping. Nests in tree cavities; breeds from late Mar to early July.	No; LP; No suitable habitat.
Sialia mexicana western bluebird	MSCP: CS Cnty of SD Group: 2	Year-round residents; favors foothill and mountain habitat with meadows for foraging. Spreading into urban areas, farmlands, and orchards with mature trees and lawns. Cavity nesters the nests early April through end of June.	No; NE; No suitable habitat onsite.
MAMMALS			
Antrozous pallidus pallid bat [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal bat species that is a yearlong resident throughout California and occurs in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests, but prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, may forage up to 2.5 km (3 mi) from day roost.	No; LP; No suitable habitat.
Chaetodipus californicus femoralis Dulzura (California) pocket mouse [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal species that occurs in a variety of habitats, including mature chaparral, coastal scrub, and grasslands, typically in brushy areas along grass-chaparral edge.	No; NE; There is no suitable habitat for this species onsite or adjacent to the project site.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Chaetodipus fallax fallax northwestern San Diego pocket mouse [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal species that occurs in a variety of habitats, including coastal scrub, chaparral and grasslands, typically in brushy areas along grass-chaparral edge.	No; LP; No suitable habitat.
Corynorhinus townsendii Townsend's western big-eared bat [6]	DFG: SSC CNDDB: SA Cnty of SD Group: 2	Roosts in caves and abandoned mines but have also been reported to utilize buildings, bridges, rock crevices and hollow trees. Forages in forest/woodland habitats or along habitat edges within 15 km of roost site.	No; LP; No suitable habitat.
Dipodomys stephensi Stephens' kangaroo rat [6]	ESA: FE CESA: ST CNDDB: SA North Cnty MSCP: NE, CS Cnty of SD Group: 1 MHCP: CS	Areas of sparse vegetation primarily grasslands, but may occur in sage scrub or disturbed areas.	No; NE; No suitable habitat onsite. Onsite grassland is comprised of dense grasses and built up thatch.
Eumops perotis californicus western mastiff bat [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal bat species that occurs in many open, semi-arid to arid habitats, including woodlands, coastal scrub, grasslands, chaparral, desert scrub, and urban areas; roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels.	No; LP; No suitable habitat.
Lepus californicus bennettii San Diego black-tailed jackrabbit [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Diurnal and crepuscular herbivore that occurs in herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats.	No; LP; No suitable habitat.
Myotis yumanensis Yuma myotis [6]	CNDDB: SA Cnty of SD Group: 2	Nocturnal bat species that is found in a wide variety of habitats ranging from sea level to 3300 m (11,000 ft), and prefers open forests and woodlands with sources of water over which to feed; roosts in buildings, mines, caves, or crevices, as well as abandoned swallow nests and under bridges, and uses separate day and night roosts; feeds over water sources on a wide variety of small flying insects found by echolocation; hibernates.	No; LP; No suitable habitat.
Nyctinomops femorosaccus pocketed free-tailed bat [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal species that occurs in woodlands, and desert scrub, riparian, wash, alkali scrub habitats, and prefers rock crevices in cliffs for roosting.	No; LP; No suitable habitat.

Scientific Name **Common Name**	**Sensitivity Codes and Status**[1, 2]	**Habitat Preferences/Requirements**[3]	**Verified On-Site; Potential To Occur On-Site; Factual Basis for Determination of Occurrence Potential**
Nyctinomops macrotis big free-tailed bat [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Nocturnal species that prefers rugged, rocky canyons but has been found in urban areas; roosts in buildings, caves, and occasionally holes in trees, and feeds primarily on large moths.	No; LP; No suitable habitat.
Odocoileus hemionus fuliginata southern mule deer [6]	MSCP: CS Cnty of SD Group: 2 MHCP: CS	Typically crepuscular species, but may be active during the day or night, that occurs in early to intermediate successional stages of most forest, woodland, and brush habitats, but prefers a mosaic of various-aged vegetation that provides woody cover, meadow and shrubby openings, and free water.	No; NE; No suitable habitat.
Onychomys torridus ramona southern grasshopper mouse [6]	CNDDB: SA DFG: SSC Cnty of SD Group: 2	Variety of habitats, including grasslands, sage scrub and chaparral, where friable soils occur.	No NE; No suitable habitat. Species expected to inhabit flat, sandy, valley floor habitats with open to semi-open scrub habitats.
Taxidea taxus American badger [6]	CNDDB: SA DFG: SSC MSCP: CS Cnty of SD Group: 2	Nocturnal and diurnal carnivore that is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils for digging burrows for cover.	No; LP; No suitable habitat onsite or adjacent to the project site.

[1] References for Sensitivity Codes and Status: County 1997, Ogden et al. 1998, AMEC 2003a, County 2010a and c, CDFG 2011b-c and 20121-b

[2] California Natural Diversity Database Special Plants/Animals = A general term that refers to all taxa inventoried by the CDFG CNDDB, regardless of their legal or protection status; these taxa include species, subspecies, or varieties that fall into one of the above categories and/or one or more of the following categories: 1) Taxa officially listed or proposed for listing under the federal and/or state ESA; 2) Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines, which may include California Rare Plant Rank (CRPR) Lists 1 and 2, and some List 3 plants; 3) U.S. Fish and Wildlife Service (USFWS); 4) Taxa considered SSC by the CDFG; 5) Taxa listed by the CRPR; 6) Taxa that are biologically rare, very restricted in distribution, declining throughout their range but are not currently threatened with extirpation, or have a critical, vulnerable stage in their life cycle that warrants monitoring; 7) Populations in California that may be peripheral to the major portion of a taxon's range, but are threatened with extirpation in California; and 8) Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, vernal pools, etc.)

[3] References for Habitat Preferences/Requirements: (plants) Reiser 2001, County 2009, CNPS 2012; (butterflies) Faulkner and Klein 2004, Opler 2010; (amphibians and reptiles) Stebbins 2003, CDFG 2012c; (birds) AOU Birds of North America On-line 2011 and CDFG 2012c; (mammals) CDFG 2012a.

[4] CNDDB only tracks the nesting locations of these bird species; the location of the nest or any indication of breeding (i.e., territorial males, adults carrying nest material, adults carrying food, the presence of newly fledged young, etc.) is acceptable evidence of nesting. County of San Diego listing is for breeding populations only.

[5] CNDDB only tracks the wintering range of these bird species. County of San Diego listing is for wintering populations only.

[6] The species addressed in this table are from the list provided in the County of San Diego project scoping letter dated August 2, 2013 as modified January 6, 2014 (County 2014, pers. comm.).

APPENDIX 4. JURISDICTIONAL WETLAND DELINEATION DATA FORMS AND PHOTO POINTS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SDGE Solar Project – Creelman Site | City/County: Unincorporated / San Diego | Sampling Date: 4/27/12

Applicant/Owner: SDGE | State: CA | Sampling Point: 1

Investigator(s): Amanda K. Gonzales | Section, Township, Range: No section, T16S, R2W

Landform (hillslope, terrace, etc.) Drainage | Local relief (concave, convex, none): Concave | Slope (%): 1

Subregion (LRR): LRR-C | Lat: 33.02175 | Long: -116.86156 | Datum: WGS84

Soil Map Unit Name: Clayey alluvial land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks:

Data point located within upland drainage. Expected to be regulated as NWW of U.S./streambed by ACOE and CDFG.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. -			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' R)			
1. -			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 20' R)			
1. *Hordeum murinum leporinum*	20	Y	UPL
2. *Lolium perenne*	20	Y	FAC
3. *Bromus hordeaceus*	20	Y	FACU
4. *Avena barbata*	15	N	UPL
5. *Bromus diandrus*	10	N	UPL
6. *Medicago polymorpha*	5	N	UPL
7. *Erodium cicutarium*	5	N	UPL
8. *Rumex crispus*	5	N	FACW
	100	= Total Cover	
Woody Vine Stratum (Plot size: 20' R)			
1. -			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Test is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

Data point located within open grassland field.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 3/2	100	-				Clay loam to	sandy clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

Soil dark. Reddish spots but no redox features detected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☐ **No** ☒ **Depth (inches):** _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Aerial photos

Remarks:

Data point located within a narrow drainage. The defined bed and bank boundaries are difficult to find due to abundant grass coverage. Width is approximately 2'-4'.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SDGE Solar Project – Creelman Site | City/County: Unincorporated / San Diego | Sampling Date: 4/27/12

Applicant/Owner: SDGE | State: CA | Sampling Point: 2

Investigator(s): Amanda K. Gonzales | Section, Township, Range: No section, T16S, R2W

Landform (hillslope, terrace, etc.) Drainage | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): LRR-C | Lat: 33.02175 | Long: -116.86158 | Datum: WGS84

Soil Map Unit Name: Clayey alluvial land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:

Data point located within open grassland field outside of streambed.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. -			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' R)			
1. -			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 20' R)			
1. *Hordeum murinum leporinum*	20	Y	UPL
2. *Lolium perenne*	20	Y	FAC
3. *Bromus hordeaceus*	20	Y	FACU
4. *Avena barbata*	15	N	UPL
5. *Bromus diandrus*	10	N	UPL
6. *Medicago polymorpha*	5	N	UPL
7. *Erodium cicutarium*	5	N	UPL
8. *Rumex crispus*	5	N	FACW
	100	= Total Cover	
Woody Vine Stratum (Plot size: 20' R)			
1. -			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Test is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

Data point located within open grassland field.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 3/2	100	-				Clay loam to	silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

Soils dark.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☐ **No** ☒ **Depth (inches):** _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Aerial photos

Remarks:

Data point located out of drainage patterns.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SDGE Solar Project – Creelman Site | City/County: Unincorporated / San Diego | Sampling Date: 4/27/12

Applicant/Owner: SDGE | State: CA | Sampling Point: 3

Investigator(s): Amanda K. Gonzales | Section, Township, Range: No section, T16S, R2W

Landform (hillslope, terrace, etc.) Drainage | Local relief (concave, convex, none): Concave | Slope (%): 0

Subregion (LRR): LRR-C | Lat: 33.02145 | Long: -116.86119 | Datum: WGS84

Soil Map Unit Name: Clayey alluvial land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks:

Data point located within upland drainage. Expected to be regulated as NWW of U.S./streambed by ACOE and CDFG.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. -			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' R)			
1. -			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 20' R)			
1. *Lolium perenne*	60	Y	FAC
2. *Avena barbata*	20	Y	UPL
3. *Hordeum murinum leporinum*	10	N	UPL
4. *Rumex crispus*	5	N	FACW
5. *Erodium cicutarium*	3	N	UPL
6.			
7.			
8.			
	98	= Total Cover	
Woody Vine Stratum (Plot size: 20' R)			
1. -			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 2 | % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Test is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

Data point located within grassland community. Presence of hydrophytic vegetation is not greater than 50 percent; thus hydrophytic vegetation is not dominant.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 3/3	100	-				Sand	
	10YR 3/2						Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

Dark soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☐ **No** ☒ **Depth (inches):** _____

Wetland Hydrology Present? **Yes** ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Aerial photos

Remarks:

Data point located within narrow drainage. This portion of drainage easier to detect due to sandy bottom. Wetland hydrology not present but presence of drainage patterns indicates presence of NWW of U.S.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SDGE Solar Project – Creelman Site | City/County: Unincorporated / San Diego | Sampling Date: 5/11/12

Applicant/Owner: SDGE | State: CA | Sampling Point: 4

Investigator(s): Amanda K. Gonzales | Section, Township, Range: No section, T16S, R2W

Landform (hillslope, terrace, etc.) Swale | Local relief (concave, convex, none): Concave | Slope (%): 1

Subregion (LRR): LRR-C | Lat: 33.02132 | Long: -116.86101 | Datum: WGS84

Soil Map Unit Name: Clayey alluvial land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒
Hydric Soil Present? Yes ☐ No ☒	
Wetland Hydrology Present? Yes ☐ No ☒	

Remarks:

Data point located within an upland swale-like feature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. -			
2.			
3.			
4.			
	-	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20' R)			
1. -			
2.			
3.			
4.			
5.			
	-	= Total Cover	
Herb Stratum (Plot size: 20' R)			
1. *Hordeum murinum leporinum*	60	Y	UPL
2. *Lolium perenne*	20	Y	FAC
3. *Rumex crispus*	5	N	FACW
4. *Lactuca serriola*	5	N	FAC
5. *Bromus hordeaceus*	5	N	FACU
6. *Avena sp.*	5	N	UPL
7.			
8.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 20' R)			
1. -			
2.			
	-	= Total Cover	

% Bare Ground in Herb Stratum 0 | % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Test is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

Data point located within grassland community. Presence of hydrophytic vegetation is not greater than 50 percent; thus hydrophytic vegetation is not dominant.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	90	10YR 6/6	3	D	PL	Clay loam to	Sandy clay loam
12-14	10YR 3/3	90	10YR 6/6	3	D	PL	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☒

Remarks:

Hydric soils not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Water Table Present? **Yes** ☐ **No** ☒ **Depth (inches):** _____

Saturation Present? (includes capillary fringe) **Yes** ☐ **No** ☒ **Depth (inches):** _____

Wetland Hydrology Present? **Yes** ☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Aerial photos

Remarks:

Data point located within a swale feature but hydrology indicators not detected nor are defined (i.e., incised) bed/bank present.

Photo Point 1. Photo of Data Point #1. OHWM indicators difficult to detect due to dense grassland habitat. Drainage expected to be regulated as NWW of U.S./streambed by ACOE, RWQCB, and CDFG. Photo taken on 04/27/2012 and directed southeastward.

Photo Point 2. Photo of Data Point #1. Photo taken on 04/27/2012 and directed northward. Pockets of standing water present where channel is deeply incised. Palm tree nursery is located immediately west of this drainage feature. Drainage feature assumed to ultimately connect to Santa Maria Creek via culvert system through rural community.

Photo Point 3. Photo of Data Point #2, which is located immediately west of Data Point #1. Data point #2 is located outside the limits of the streambank. Photo taken on 04/27/2012 and directed southeastward.

Photo Point 4. Overview photo of Data Point #3. Data point #3 is located within drainage feature #3 (as referred to within the report). Drainage #3 lacks defined OHWMs (i.e., it is a swale) but assumed to be regulated as NWW of U.S./streambed by ACOE, RWQCB, and CDFG due to connection to Drainage #1. This will have to be verified through the environmental review process. Photo taken on 04/27/2012 and directed southward.

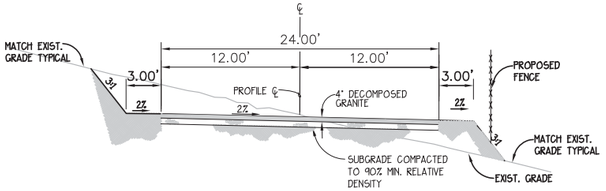
Photo Point 5. Close up photo of Data Point 4. Limit of swale feature extends to a width of approximately 18 feet. Photo taken on 04/27/2012 and directed southward.

Intentionally left blank

Photo Point 6. Overview photo of drainage feature #3. This feature receives flow from the urban developed lands to the south of the SDG&E parcel via a culvert under Creelman Lane. The flow is conveyed via sheet flow through the Palm Tree Nursery. This point represents the start of a defined channel. However, the OHWM indicators are limited to a short segment after which the feature turns into a swale like feature (see Photo Point 5). Photo taken on 05/11/2012 and directed northward.

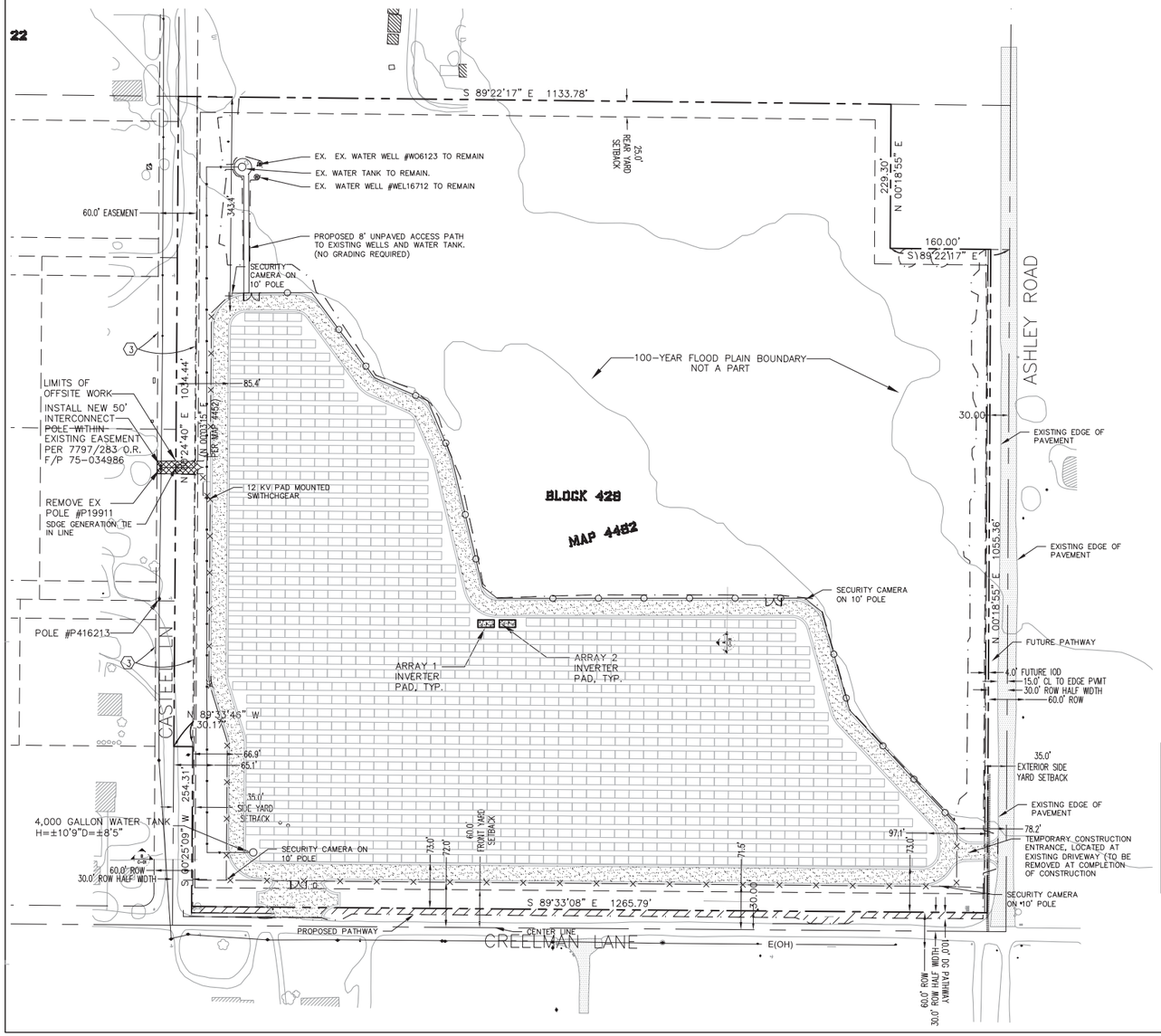
Photo Point 7. Photo taken at same location as Photo Point #6 but directed southward toward the Palm Tree Nursery. Photo taken on 05/11/2012 and directed southward.

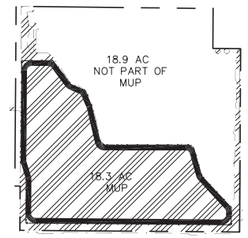
APPENDIX 5. IES/SDGE – PLOT PLAN (BERGERABAM 2015)



A TYPICAL SECTION - PERIMETER FIRE ACCESS ROAD

NTS





MAJOR USE AREA

30' FUEL MODIFICATION ZONE

LIMITS OF MAJOR USE PERMIT AREA & FUEL MODIFICATION ZONE

NOT TO SCALE

NOTES

1. GROSS AREA: 37.2 ACRES
2. MUP AREA: 18.3 ACRES
3. LOT COVERAGE: 19.5%; FAR: 0.005
4. TOPOGRAPHIC SOURCE: SIERRA SURVEYING, 2013
5. ASSOCIATED REQUESTS: NONE
6. THE APPROVAL OF THIS MAJOR USE PERMIT (MUP) AUTHORIZES THE FOLLOWING: CONSTRUCTION, OPERATION, AND MAINTENANCE OF UNMANNED PHOTOVOLTAIC SOLAR FACILITY PURSUANT TO SECTION 6952, OF THE SAN DIEGO COUNTY ZONING ORDINANCE.
7. PRELIMINARY GRADING PROPOSED. SEE PRELIMINARY GRADING PLAN. THIS PLAN IS PROVIDED TO ALLOW FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN THEREON, AND AGREES TO OBTAIN VALID GRADING PERMIT BEFORE COMMENCING SUCH ACTIVITY, IF REQUIRED.
8. ALL PROPOSED STRUCTURES TO BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS (CONCRETE, BLOCK, METAL) OR SIMILAR.
9. LIGHTING FOR MAINTENANCE AND SECURITY PROPOSES ONLY. SHIELDED AND MOTION SENSOR LIGHTING LOCATED AT GATES AND SHALL CONFORM TO COUNTY OF SAN DIEGO OUTDOOR LIGHTING REQUIREMENTS.
10. PHASING – THE PROJECT WILL BE CONSTRUCTED IN ONE PHASE.
11. ALL DISTURBED AREAS WOULD BE COVERED WITH PERMEABLE DUST / EROSION CONTROL AGENT.
12. NO PUBLIC SIGNAGE PROPOSED, ONLY SMALL DIRECTIONAL AND SAFETY SIGNAGE ARE PROPOSED ONSITE.
13. ALL EXISTING STRUCTURES TO REMAIN.
14. THE SOLAR RELATED FACILITIES (PANELS, RACKING, ELECTRICAL CONNECTIONS, INVERTER STRUCTURES, FENCING AND INTERNAL ACCESS, ETC.) SHOWN ON THIS PLOT PLAN MAY BE RELOCATED. RECONFIGURED, AND / OR RESIZED WITHIN THE SOLAR FACILITY DEVELOPMENT AREA WITH THE ADMINISTRATIVE APPROVAL OF THE DIRECTOR OF PDS WHEN FOUND IN CONFORMANCE WITH THE INTENT AND CONDITIONS OF PERMIT'S APPROVAL.
15. WATER DISTRICT: RAMONA MUNICIPAL WATER DISTRICT
16. FIRE DISTRICT: RAMONA FIRE PROTECTION DISTRICT
17. GENERAL PLAN: PUBLIC SEMI-PUBLIC LANDS
18. POINT OF INTERCONNECT – CASTEEL LANE ROW/ROAD PURPOSES AND UTILITY LINE EASEMENT
19. SEE PRELIMINARY GRADING PLAN SHEET C-02 FOR STREET SECTIONS
20. THE TEMPORARY PRIVACY SCREEN LANDSCAPE FABRIC WILL BE PLACED ALONG THE OUTSIDE PERIMETER OF THE CHAIN LINK FENCE AND WILL BE REMOVED AFTER THE 5 YEAR LANDSCAPE ESTABLISHMENT PERIOD.
21. COLOR OF INVERTER WILL BE NON-REFLECTIVE FLAT WHITE, SWITCHGEAR WILL BE A LIGHT EARTH TONE AND THE WATER TANK WILL BE DARK GREEN.
22. SECURITY CAMERAS WILL BE SHIELDED FROM VIEW AND WILL BE ANGLED TO ONLY MONITOR THE PROPERTY TO THE SITE BOUNDARY
23. ALL EXISTING PALMS ON PROPERTY WILL BE REMOVED.
24. SLATS (GREEN PLASTIC) WILL BE PLACED ALONG THE NORTHERN CHAIN-LINK FENCE AND WILL REMAIN FOR THE LIFE OF THE FACILITY.
25. SOLAR PANELS WILL HAVE AN ANTI-REFLECTIVE COATING.
26. BERMS HAVE BEEN ADDED ALONG CREELMAN LANE FOR ADDITIONAL SCREENING OF THE PROPERTY. REFER TO SHEET C-02 PRELIMINARY GRADING PLAN FOR BERM PLACEMENT.

ASSESSOR PARCEL NUMBER

284-340-35 = 37.2 GROSS ACRES

GENERAL NOTES

THE CONTRACTOR SHALL ARRANGE FOR A PRIVATE UNDERGROUND UTILITY LOCATOR PRIOR TO EXCAVATION AND SHALL ARRANGE FOR AND COORDINATE SHUT DOWN, DISCONNECTION AND CAPPING OF EXISTING UTILITIES WITH THE APPROPRIATE UTILITY OWNERS PRIOR TO COMMENCING THE WORK.

GRADING QUANTITIES

INCLUDES ONSITE AND OFFSITE WORK
CUT 2608 CY FILL 2608 CY IMPORT 0 CY

OFFSITE WORK ONLY CUT 0 CY FILL 210 CY IMPORT FROM MUP AREA 210 CY

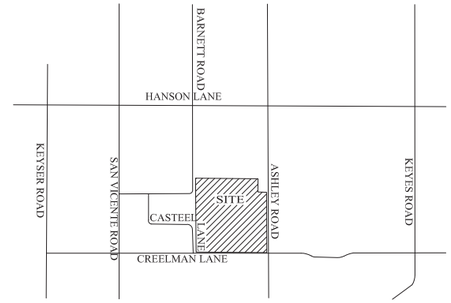
ZONING

USE REGULATIONS		A70
NEIGHBORHOOD REGULATIONS		M
DEVELOPMENT REGULATIONS	DENSITY	–
	LOT SIZE	4AC
	BUILDING TYPE	C
	MAXIMUM FLOOR AREA	–
	FLOOR AREA RATIO	–
	HEIGHT	G
	LOT COVERAGE	–
	SETBACK	C
	OPEN SPACE	–
SPECIAL AREA AND REGULATIONS		D2.POR F

EXISTING EASEMENTS*

#	DESCRIPTION	DISPOSITION
③	ROAD PURPOSES AND UTILITY LINES	TO REMAIN

* BASED ON DATA FROM PRELIMINARY TITLE REPORT BY CHICAGO TITLE COMPANY DATED APRIL 18, 2013.



VICINITY MAP

(T.B. 1172-H2)

N.T.S.

LEGEND

DESCRIPTION	SYMBOL
EXISTING ASPHALT ROAD	
PROPOSED CONCRETE INVERTER PAD	
PROPOSED 24' DG FIRE ACCESS ROAD ALL WEATHER	
PROPOSED PATHWAY	
PROPOSED 8' CHAIN LINK FENCE WITH TEMP. PRIVACY SCREEN LANDSCAPE FABRIC	— X —
PROPOSED 8' CHAIN LINK FENCE WITH PERMANENT GREEN PLASTIC SLATS	—○—
EXISTING FENCE	— — —
16 MODULE SUB ARRAY PANEL SHADE STRUCTURE	
EXISTING POWER POLE	•
EXISTING FIRE HYDRANT	
EXISTING WELL (2)	◉
EXISTING PROPERTY LINE	
EXISTING EASEMENT	
MUP LIMITS	
BUILDING SET BACK LINE	
EXISTING OVERHEAD POWER	E(OH)
PROPOSED UNDRGROUND INTERCONNECT LINE	E
PROPOSED 3' FIELD FENCE	
DOUBLE ACCESS GATE	W
PROPROSED WATER LINE	W
EXISTING WATER LINE (APPROX. LOCATION)	W
RELINQUISH ACCESS RIGHTS	

APPLICANT

INDEPENDENT ENERGY SOLUTIONS, INC
1090 JOSHUA WAY
VISTA, CA 92081
CONTACT: ERIC JOHNSTON
760-752-9706

OWNER

SAN DIEGO GAS & ELECTRIC
8315 CENTURY PARK COURT
SAN DIEGO, CA 92123
CONTACT: JOE FRANI
858-654-8731

SHEET INDEX

1" = 100' scale 100 0 100 200 feet

BergerABAM
10525 Vista Sorrento Parkway, Suite 350
San Diego, California 92121-2745
(858) 500-4500 Fax: (858) 500-4501

COUNTY PROJECT NUMBER: PDS2014-MUP-14-013

Last Saved by: Mike.magee on: May 11, 2015 10:37 AM File: C:\SanDiego\2013\A13.0324\CADD\Dwgs\A13.0324.00 Plot Plan - CREELMAN.dwg
CREELMAN.dwg

Drawn by	ES
Checked by	MM
Date	03/07/14
Commission No.	

No.	DATE	BY	REMARKS
1	08/18/14	MM	COUNTY COMMENTS
2	03/13/15	MM	COUNTY COMMENTS
3	05/15/15	MM	COUNTY COMMENTS
4			

IES/SDG&E SOLAR ENERGY PROJECT - RAMONA

TITLE SHEET/PLOT PLAN

Sheet Number C-01

1 of 5