A Stantec Senior Biologist has conducted a peer review of the most up to date biological resources technical reporting for the Lancaster Energy Center Project (Project). As part of the peer review, the following documents were reviewed for the purpose of determining whether the documentation is sufficient for the development of the Biological Resources section to be included in the Environmental Impact Report (EIR) development process for the Project and to identify whether any further site visits, surveys, or analysis will need to be conducted prior to the development of the EIR:

- Lancaster Solar Generating Facility General Biological Resources Assessment (NOREAS July 2014)
- Lancaster Energy Center Project Jurisdictional Determination (NOREAS August 2014)
- California Department of Fish and Wildlife (CDFW) Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Lancaster Energy Center, Conditional Use Permit 14-10, General Plan Amendment 14-10, and Zone Change 14-10; Los Angeles County (SCH# 2014071077)

Peer Review

Lancaster Solar Generating Facility General Biological Resources Assessment (NOREAS July 2014)

The NOREAS (July 2014) report included up to date searches of biological resources databases for the Project area in relation to special-status species, habitats, and wetlands with potential to occur in the area and any designated candidate, threatened, or endangered species or species of concern that may have the potential to occur in the Project area. Database information on Critical Habitat for designated threatened and endangered species was identified for the Project area as well as general habitat mapping for the Project site itself. Surveys of the Project site and area were conducted on the following dates: June 24, 25, 30 and July 1, 2, and 3 of 2014. Based on a result of the
background research conducted and the site surveys, the following species were reported to have to potential to occur within the Project site and Project area:

- No State of California or Federally Listed Species Have Been Documented on the Project Site (during 2014 surveys or historically)
- Loggerhead Shrike – identified on the Project site during 2014 surveys in the northeastern and southeastern corner of the Project site
- Burrowing Owl – identified on the Project site during the 2014 surveys in the northwestern corner of the Project site
- Ferruginous Hawk – historically identified on the Project site
- Coast Horned Lizard – suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Swainson’s Hawk – suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Peirson’s Morning-Glory - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Slender Mariposa-Lily - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Round-Leaved Filaree - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Pale-Yellow Layia - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Parry’s Spineflower - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- White Pygmy-Poppy - suitable habitat for this species on the Project site, not identified during the 2014 surveys
October 10, 2014
Jocelyn Swain
Page 3 of 7

Reference: Lancaster Energy Center EIR- CUP 14-10- Biological Resources Technical Report
Peer Review

- California Androsace - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Slender Mariposa-Lily - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Mojave Spineflower - suitable habitat for this species on the Project site, not identified during the 2014 surveys
- Mojave Paintbrush - suitable habitat for this species on the Project site, not identified during the 2014 surveys

Conclusion: The NOREAS (July 2014) surveys were largely implemented outside of the blooming season for several special status plant species that were reported to have suitable habitat within the Project site. In addition, the amount of precipitation recorded between 2013 to 2014 was well below average, which could under estimate the species within a given site if a dry year limits the blooming certain species. For example, the White Pygmy-Poppy and Peirson’s Morning-Glory are known to bloom between March and June in a given year and the report identifies surveys conducted at the end of the known blooming season for those species. However, suitable habitat for any of the species documented in the report is limited given the disturbed nature of much of the Project site and the results of historical surveys conducted in and adjacent to the Project area. For the Ferruginous and Swainson’s Hawk, the site contains foraging habitat, but does not appear to contain suitable nesting habitat for either of these species.

The NOREAS (July 2014) report concludes that the following avoidance and minimization measures be implemented to minimize impacts to special status species that have the potential to occur within the Project site:

- If adverse impacts to suitable habitat for any special status species can’t be avoided, surveys for special status resources should be implemented at the appropriate detection period to determine presence and absence
- Pre-construction surveys for nesting raptors and birds protected by the Migratory Bird Treaty Act (MBTA) should be implemented between March 15th and September 1st prior to onset of Project activities. If active nesting is detected, to the maximum extent practicable, a buffer zone from occupied nests should be maintained during physical ground disturbing activities
- Drainage features should be identified within the Project site and if any of the features can’t be maintained to meet the regulatory no net loss policy for any
regulated drainage features, appropriate regulatory approvals should be sought prior to disturbing such features

Lancaster Energy Center Project Jurisdictional Determination (NOREAS August 2014)

The NOREAS (August 2014) Jurisdictional Determination identified 8.33 acres of drainages that lie under the jurisdiction of and would be regulated by CDFW; however, none of the drainage features were identified as waters of the United States or waters of the State of California and are therefore, not subject to the jurisdiction of the Clean Water Act Sections 404 and 401.

The Jurisdictional Determination determined that the mapped drainages and streams within the Project site are not connected to any other waters of the United States or waters of the State of California, which would be identified as a navigable waters or being connected to such navigable waters.

Conclusion: The Jurisdictional Determination states that pursuant to the CDFW Section 1600 (et seq.) the substantial diversion, obstruction, changes to the flow or bed, channel, or bank of any river, stream, or lake that supports fish and wildlife would be subject to a discretionary approval by State agencies prior to Project implementation. Furthermore, the Jurisdictional Determination states that the Project applicant has committed to filing a Report of Waste Discharge with the Regional Water Quality Control Board (RWQCB) and completing a National Pollutant Discharge Elimination System (NPDES) permit application to demonstrate compliance with the Porter-Cologne Water Quality Control Act.

California Department of Fish and Wildlife (CDFW) Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Lancaster Energy Center, Conditional Use Permit 14-10, General Plan Amendment 14-10, and Zone Change 14-10; Los Angeles County (SCH# 2014071077)

The main comments from CDFW on the NOP include the following:

- California Endangered Species Act (CESA) listed species – given lack of focused surveys for desert tortoise and Mahave ground squirrel, CDFW recommends that the NOP include a habitat level description for these species, while species specific surveys can be implemented to refine the analysis in the EIR. Biological monitoring and reporting proposals for these species should be implemented as part of a CESA Incidental Take Permit (ITP) process.
Swainson’s hawk – nesting has been documented within 3 miles of the Project site and therefore, CDFW recommends the Project applicant apply for a CESA ITP for this species.

Avian Impacts, Nesting Bird Monitoring Plan, and Avian Migration are each highlighted with their own comment – avian impacts are an emerging concern for CDFW and the recommend that a Nesting Bird Monitoring Plan and Bird and Bat Conservation Strategy (BBCS) be developed as part of the proposed Project development and operations. In addition, CDFW recommends fixed-point bird surveys and migratory bird inventories for the Project site.

Generation-tie Routes – cable should be routed through a conduit and if overhead wires are included in the Project, a raven management plan should be developed.

Impacts to Significant Ecological Areas (SEAs) – CDFW identifies several SEAs in the greater Project area and recommends a Project design that takes wildlife movement into consideration in order to minimize potential impacts to migration corridors and animal movements through the Project site.

Burrowing Owl Impacts – the Project should follow the CDFW 2012 Staff Report on Burrowing Owl Mitigation and it should be used during the development of the EIR.

Pit-Fall Traps – CDFW suggests a pit-fall trap study be conducted to determine the presence and absence of coast horned lizard, silvery legless lizard, and the two-striped garter snake within the Project site. CDFW recommends that an analysis of potential impacts to these species be incorporated into the EIR.

Botanical Surveys – CDFW recommends following the protocol for the implementation of surveys for and the evaluation of potential impacts to special status plant species.

Decommissioning Plan – develop and analyze such a 35 year plan as part of the development of the Draft EIR.

Extent of Grading – CDFW recommends an explanation of alternatives for installation of the facilities as part of the Draft EIR.

Impacts to Streams – CDFW has authority over activities in streams and therefore, any activities that could substantially impact such features, a written notification for authorization of such potential impacts to streams should be submitted to CDFW prior to the implementation of such activities.
Reference: Lancaster Energy Center EIR - CUP 14-10 - Biological Resources Technical Report Peer Review

Conclusion: CDFW includes general comments on addressing their concerns within the Draft EIR, including the development of specific mitigation measures for adverse impacts to sensitive plants, wildlife, and habitats, and measures to protect sensitive nesting birds and the development of plans for restoration and revegetation. Several of the CDFW comments should be addressed within the Draft EIR for issues not identified in any of the peer reviewed documentation. Several other comments will be addressed within the Draft EIR with the existing information that is included in each of the 3 reports subject to this peer review for the Project site.

Peer Review Recommendations

Based on the level of analysis conducted in the peer reviewed documentation for the proposed Project and the comments outlined in the CDFW letter for the NOP of the proposed Project, it is recommended that the following be implemented prior to and during the development of the Draft EIR for the proposed Project:

- Coordinate the Jurisdictional Determination findings with CDFW and RWQCB to identify the appropriate setbacks from mapped streams and drainages identified within the Project site. Appropriate setbacks will minimize indirect effects to such features from sedimentation and erosion during construction and operations of the facility.

- Identify specific mitigation measures within the Draft EIR that detail additional botanical surveys to be implemented prior to the initiation of construction, which will minimize impacts to those species if they are identified on site during surveys prior to construction. Specific measures should be developed within the Draft EIR that identify the measures to be implemented if a special status plant species is identified during pre-construction surveys for those species.

- Identify in the Draft EIR that a Nesting Monitoring Plan will be developed for potential construction and operational impacts to sensitive nesting avian species.

- Identify in the Draft EIR that a Bird and Bat Conservation Strategy (BBCS) will be developed for potential construction and operational impacts to sensitive avian and bat species.

- Identify specific mitigation measures within the Draft EIR that detail burrowing owl pre-construction surveys, and if identified during those surveys, what measures will
be implemented to avoid impacts to the species during construction and operations of the Project. The CDFW 2012 Staff Report on Burrowing Owl Mitigation should be incorporated into the development of such survey methodologies and if required, mitigation for impacts to the species.

- As part of the analysis of potential wildlife corridors and wildlife movements, include an evaluation of the SEAs identified by CDFW to determine the level of potential impact to wildlife corridors and wildlife movements in the Draft EIR.

- The general comments by CDFW should be included in the analysis and development of the Draft EIR, including a cumulative effects analysis and analysis of the effects of noise, human activity, and exotic species on wildlife.

Greg Matuzak
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This Supplemental Biological Resources Technical Memorandum (Technical Memo) is a supplemental biological resources assessment for the Lancaster Energy Center solar facility (the “site”) located in the City of Lancaster, California. This Technical Memo is a supplement to the NOREAS (2104a) Biological Resources Report for the Lancaster Energy Center Project containing the proposed solar facilities project site. This Technical Memo includes the results of reconnaissance-level biological surveys for three gen-tie line options, which have been proposed to provide the Los Angeles Department of Water and Power (LADWP) power at the Barren Ridge-Rinaldi 230 kilowatt (kV) transmission line to the west of the proposed solar facility. Each of these gen-tie lines would be 230 kV, underground, and would start from the southeast corner of 110th Street West and Avenue J. The gen-tie lines surveyed as part of this Technical Memo are located on Figure 1 attached.

On November 5, 2014, a Stantec biologist conducted a general biological assessment of each of the gen-tie line options and adjacent areas to determine if the proposed use of any of the options could be constrained by the presence of sensitive or protected biological resources, including jurisdictional drainages. This Technical Memo was conducted to identify potential impacts to sensitive biological resources and to develop avoidance options where feasible for the addition of the gen-tie line options to the project. Should sensitive resources be present along the selected gen-tie line option for the build out of the solar facility, specific mitigation measures would be required to reduce any potential significant impact to them to a level of less than significant if feasible.

Background Information

A previous Biological Resources Report for the Lancaster Energy Center Project was prepared by NOREAS, Inc. of Irvine, California (July 2014) that included up to date searches of biological resources databases for the project area. The database searches included known and potential special-status species, habitats, and wetlands with potential to occur in the solar facilities project area and any designated candidate, threatened, or endangered species or species of concern that may have the potential to occur in the site area. The NOREAS (2014) Biological Resources Report for the Lancaster Energy Center Project covered the solar facilities project area only and did not include surveys or an assessment of any of the gen-tie line options. Database information on Critical Habitat for
designated threatened and endangered species was also provided for the site area as was general habitat mapping for the site itself. Previous surveys of the solar facilities project site and area were conducted by NOREAS on the following dates: June 24, 25, 30 and July 1, 2, and 3 of 2014. Based on a result of the background research conducted and the site surveys, the following species were reported to have the potential to occur within the site and area:

- No State of California or Federally Listed Species have been documented on the site (during 2014 surveys or during previous surveys conducted in the proposed project site)
- Loggerhead Shrike (Lanius ludovicianus) – identified on the site during 2014 surveys in the northeastern and southeastern corner of the Project site
- Burrowing Owl (Athene cunicularia spp. hypugaea) - identified on the site during the 2014 surveys in the northwestern corner of the Project site
- Ferruginous Hawk (Buteo regalis) – historically identified on the site
- Coast Horned Lizard (Phrynosoma coronatum) – suitable habitat for this species on the site, not identified during the 2014 surveys
- Swainson’s Hawk (Buteo swainsoni) – suitable habitat for this species on the site, not identified during the 2014 surveys
- Peirson’s Morning-Glory (Calystegia peirsonii) - suitable habitat for this species on the site, not identified during the 2014 surveys
- Slender Mariposa-Lily (Calochortus clavatus) - suitable habitat for this species on the site, not identified during the 2014 surveys
- Round-Leaved Filaree (Erodium macrophyllum) - suitable habitat for this species on the site, not identified during the 2014 surveys
- Pale-Yellow Layia (Layia heterotricha) - suitable habitat for this species on the site, not identified during the 2014 surveys
- Parry’s Spineflower (Chorizanthe parryi) - suitable habitat for this species on the site, not identified during the 2014 surveys
• White Pygmy-Poppy (Canbya candida) - suitable habitat for this species on the site, not identified during the 2014 surveys

• California Androsace (Androsace elongate) - suitable habitat for this species on the site, not identified during the 2014 surveys

• Slender Mariposa-Lily (Calochortus clavatus) - suitable habitat for this species on the site, not identified during the 2014 surveys

• Mojave Spineflower (Chorizanthe spinosa) - suitable habitat for this species on the site, not identified during the 2014 surveys

• Mojave Paintbrush (Castilleja plagiotoma) - suitable habitat for this species on the site, not identified during the 2014 surveys

In addition, NOREAS documented desert kit fox (Vulpes macrotis arsipus) within the proposed solar facilities project site. Therefore, the proposed solar facilities project site contains suitable foraging and denning habitat for this species in the proposed solar facilities project site. Though not federally or state listed, or designated as a species of special concern by CDFW, the desert kit fox is protected by CDFW as a furbearing mammal. It is assumed that mammal burrows large enough for the desert kit fox to use could be potential den sites for the species.

Stantec’s reconnaissance-level biological resources field survey and this Technical Memo are intended to update the previous surveys conducted by NOREAS for the solar facilities project area with respect to the three gen-tie line options that will connect to the proposed solar facilities.

Survey Methodology

The field assessment was initiated by examining the general layout of the gen-tie line options via aerial photographs and Google Earth, as well as by conducting a combination of road and pedestrian surveys of the proposed gen-tie line options and surroundings. The gen-tie routes were surveyed with a 25 foot buffer on each side of the centerline for a total survey area of 24 acres. The gen-tie line options surveyed are included in the attached figure showing each option and the results of an updated California Natural Diversity Data Base (CNDDB) search for the gen-tie options (Figure 1). Road surveys were conducted from a vehicle and in areas where there was less vegetation and high visibility. Lands beyond the immediate proposed gen-tie line option areas were additionally visually observed.
During the surveys, representative photographs of the gen-tie options were taken and are compiled as a photo log (see Photo Log attached). Global Positioning System (GPS) location measurements were made for select features such as intermittent streams, sensitive biological resources, etc. Prior to initiation of the field assessment of the gen-tie line options, a CNDDDB database search was conducted for the gen-tie line options and a 3 mile buffer to identify known sensitive biological resources that have been identified in the vicinity of the gen-tie lines (Figure 1).

Results

Project areas within the gen-ties line options are located along well traveled roads and are thus generally disturbed and developed. The proposed gen-tie line options are within previously disturbed agricultural fields. The defined habitats for the 24 acres surveyed include annual grasslands and developed/disturbed. In general, the developed/disturbed habitats include the roads and the annual grasslands are located adjacent to the developed/disturbed roadways in the buffers surveyed. The fields are fallow and are vegetated primarily by non-native annual grasses and scattered Ericameria nauseosa shrubs. Two narrow intermittent streams occur along J Ave. between 130th Street and 110th Street. These intermittent streams were dry at the time of Stantec’s survey. The streams generally trend north to south along gen-tie route 4 and the Universal Transverse Mercator (UTM) coordinates of the intermittent stream locations are: 11S E 0377520, N 3839387 North American Datum (NAD) 83, and 11S E 0375875, N 3839415 NAD 83 (see Figure 2). Small mammal burrows and badger digs occur within the gen-tie route 1. An active burrowing owl burrow was also observed SE of the road intersection of G Ave. and 120th Street (see Figure 2 - gen-tie route 1). The UTM coordinates of the burrow are: 11 S E 0377326, N 3844144 NAD 83.

Conclusion

The proposed solar facilities project site and gen-tie lines do not contain the presence of or suitable habitat for the desert tortoise (Gopherus agassizii) or Mohave ground squirrel (Xerospemophilus mohavensis). The desert tortoise has not been documented within 10 miles of the proposed project areas and suitable habitat for the species was absent during field surveys in June, July, and November 2014 and therefore, this species is not discussed further. Though the Mohave ground squirrel has been documented 7.5 miles from the proposed solar facilities project site and more than 10 miles from the gen-tie line options, suitable habitat for the species was absent during field surveys in June and July 2014 (NOREAS 2014a) and November 2014. Therefore, this species is not discussed further.

Given that NOREAS documented desert kit fox (Vulpes macrotis arsipus) within the proposed solar facilities project site, it is assumed that burrows of appropriate size for the species could be suitable for the desert kit fox along the gen-tie options. No sign of the
species was identified during the field assessment of the gen-tie line options. However, the proposed project site contains suitable foraging and denning habitat for this species and pre-construction surveys for this species should be conducted along the selected gen-tie line option prior to construction.

No State of California or Federally Listed Species have been documented within the solar facilities project site or along the gen-tie line options; however, the gen-tie line options contain suitable habitat for several special status wildlife and plant species. The burrowing owl is listed as a Species of Special Concern by the California Department of Fish and Wildlife (CDFW) and has been identified within the solar facilities project area and along gen-tie route 6 (see Figure 2). Construction of the solar power project, including the selected gen-tie line for the project, should follow the CDFW 2012 Staff Report on Burrowing Owl Mitigation. Swainson’s hawk have been documented in the agricultural fields between gen-tie routes 4 and 5 (see Figure 1); however, nesting habitat for this species does not occur along any of the gen-tie options.

For the Ferruginous and Swainson’s Hawk, the gen-tie line options contain foraging habitat, but does not appear to contain suitable nesting habitat for either of these species. Mountain Plover has also been documented adjacent to the gen-tie line option route 6 along 110th Street West (see Figure 1) and pre-construction surveys for this species should be implemented as part of the migratory bird and raptor pre-construction surveys that will be required to be implemented as part of the approvals for the solar facilities project and gen-tie line connections (see below).

The NOREAS (June and July 2014) surveys were largely implemented outside of the blooming season for several special status plant species that have suitable habitat within the solar facilities project site. For example, the White Pygmy-Poppy and Peirson’s Morning-Glory are known to bloom between March and June and surveys were conducted for special status plants at the end of the known blooming season for those species. Clokey’s cryptantha (Cryptantha clockeyi) has been documented within a mile of the northern most gen-tie line (route 6 – see Figure 1) that runs along West Avenue G. The San Fernando spineflower (Corizanthe xanthi var. fernandina), a federal candidate for listing and listed as endangered on the State endangered species list; and round-leaved filaree (California macrophylla), a CNPS 1B.1 species, have been identified within 3 miles southwest of the gen-tie line and western solar facility project area. These two plant species have been identified adjacent to Elizabeth Lake (Figure 1). However, given the disturbed nature of the gen-tie line options, the potential for these species to occur along any of the gen-tie line options is considered very low.

Though suitable habitat for any of the special status plant species listed above and within the database search for this Technical Memo is limited given the disturbed nature of much of the gen-tie line options, pre-construction surveys for special status plant species
Reference: Lancaster Energy Center EIR- CUP 14-10- Supplemental Biological Resources Technical Memo for Addition of New Gen-Tie Lines

should be implemented prior to construction of the selection gen-tie option to avoid and minimize potential impacts to them from project development.

The NOREAS Biological Resources Report for the Lancaster Energy Center Project concludes that the following avoidance and minimization measures be implemented to minimize impacts to special status species that have the potential to occur within the solar facilities project site:

- If adverse impacts to suitable habitat for any special status species can’t be avoided, surveys for special status resources should be implemented at the appropriate detection period to determine presence and absence

- Pre-construction surveys for nesting raptors and birds protected by the Migratory Bird Treaty Act (MBTA) should be implemented between March 15th and September 1st prior to onset of project activities. If active nesting is detected, to the maximum extent practicable, a buffer zone from occupied nests should be maintained during physical ground disturbing activities (Stantec has identified February 1 through September 1 as the bird nesting period in the desert region surrounding Lancaster and those dates will be used in the development of the DEIR for the project)

- Drainage features should be identified within the project site and if any of the features can’t be maintained to meet the regulatory no net loss policy for any regulated drainage features, appropriate regulatory approvals should be sought prior to disturbing such features

The NOREAS Jurisdictional Determination (August 2014) identified 8.33 acres of drainages within the proposed solar facilities project area that lie under the jurisdiction of and would be regulated by CDFW; however, none of the drainage features were identified as waters of the United States or waters of the State of California and are therefore, not subject to the jurisdiction of the Clean Water Act Sections 404 and 401. The survey of the gen-tie line options did not result in any findings that differed from this conclusion with respect to jurisdictional waters regulated under Clean Water Act Sections 404 and 401. However, 2 intermittent streams were identified along the gen-tie line options (Figure 2 - route 4) and should also be avoided with a minimum 7 foot buffer from the top of the bank for both of the 2 intermittent streams, if feasible.

CDFW has authority over activities in streams with defined bed and banks and they contain ecological value. Therefore, for any activities that could impact the bed, bank, or habitat associated with the 2 intermittent streams identified along the gen-tie line route 4,
Reference: Lancaster Energy Center EIR- CUP 14-10- Supplemental Biological Resources Technical Memo for Addition of New Gen-Tie Lines

a written notification for authorization of such potential impacts to would be required to be submitted to CDFW prior to the implementation of such activities.

Please contact us if you have any questions regarding this Technical Memo.

Sincerely,

Greg Matuzak
Senior Biologist/Environmental Compliance Specialist
Phone: 530.470.0515
Greg.matuzak@stantec.com
Observed Burrowing Owl Burrow

Legend

- Intermittent Stream Crossing
- Observed Burrowing Owl Burrow

- Gen-tie Route 1
- Gen-tie Route 2
- Gen-tie Route 3
- Gen-tie Route 4
- Gen-tie Route 5
- Gen-tie Route 6

Intermittent Stream Crossing

Intermittent Stream Crossing

Figure 2

Observed Burrowing Owl Burrow
Road intersection of 130th Street and J Ave. facing E toward 110th Street.

Photograph No. 1

View facing W from 110th Street toward 130th Street.

Photograph No. 2
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**Photograph No. 3**

Road intersection of 110th Street and J Ave. facing N towards I Ave.

**Photograph No. 4**

Road intersection of 110th Street and I Ave. facing S towards J Ave.
### Photograph No. 5

Road intersection of 110th Street and I Ave. facing W towards 125th Street.

### Photograph No. 6

Road intersection of 125th Street and I Ave. facing E towards 110th Street.
 Photograph No. 7

Road intersection of 110th Street and G Ave. facing S towards I Ave.

Photograph No. 8

Road intersection of 110th Street and G Ave. facing W towards 120th Street.
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**Photograph No. 9**

Road intersection of 120th Street and G Ave. facing E towards 110th Street.

**Photograph No. 10**

Active *Athene cunicularia hypugaea* burrow with white wash and pellets at burrow entrance.
LANCASTER SOLAR GENERATING FACILITY
July 2014

General Biological Resources Assessment
Del Sur United States Geological Survey 7.5-Minute Topographic Quadrangle Map
San Bernardino Base and Meridian
Township 6 North, Range 13 West, Section 5;
Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 28, 29, 30, 31, 32 and 33; and
Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26 and 36

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Prepared By
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<td>B</td>
<td>Photograph Log</td>
</tr>
<tr>
<td>C</td>
<td>Plant Species Observed within the Study Area</td>
</tr>
<tr>
<td>D</td>
<td>Wildlife Species Observed within the Study Area</td>
</tr>
</tbody>
</table>
1.0 EXECUTIVE SUMMARY

sPower LLC (sPower) is an independent solar power producer and developer of distributed solar assets for utilities that are both municipally- and investor-owned. sPower is proposing to develop the Lancaster Solar Generating Facility in Lancaster, California (hereafter referred to as the Project) (Figure 1). This report documents the findings of baseline biological resources surveys for the Project. The intended use of this document is to disclose and evaluate habitat conditions and determine the potential for occurrence of common and special-status species, and their habitats within study area limits. For the purposes of this report, the “study area” includes the Project’s proposed ground disturbance footprint (Project Site), and a buffer (Figure 2). The Project Site includes the solar generating facility footprint and generation tie line locations.

Eight vegetation communities/land cover types were observed within the study area: Bunchgrass Grassland, Annual Grassland, California Buckwheat Scrub, Disturbed/Developed, Fourwing Saltbush Scrub, Nonnative Woodland, Rabbitbrush Scrub and Ruderal. Greater than 60% of the Project Site consists of non-native vegetation, developed, disturbed and ruderal land cover types. The study area is not collocated with any USFWS-designated critical habitat. Pedestrian based biological surveys have been performed within discrete portions of the study area in 2007, 2009, 2011, and again in 2014. No state- or federally-listed species have been detected within the study area during any of the surveys. Nonetheless, Ferruginous Hawk (Buteo regalis), Burrowing Owl (Athena cunicularia) and Loggerhead shrike (Lanius ludovicianus) have been historically documented within the study area. Burrowing Owl and Loggerhead shrike were observed during the June and July 2014 field survey events.

The Project Site also includes the substantive habitat requirements that could potentially support the following special status species – under the appropriate suite of environmental circumstances; Ferruginous Hawk (Buteo regalis), Coast Horned Lizard (Phrynosoma blainvillii), Swainson’s Hawk (Buteo swainsoni), Peirson’s Morning-Glory (Calystegia peirsonii), Slender Marioposa-Lily (Calochortus clavatus var. gracilis), Round-Leaved Filaree (California macrophylla), Pale-Yellow Layia (Layia heterotricha), Parry’s Spineflower (Chorizanthe parryi var. parryi), White Pygmy-Poppy (Canbya candida), California androsace (Androsace elongata L. ssp. Acuta), Mojave spineflower (Chorizanthe spinosa) and Mojave paintbrush (Castilleja plagiotoma). Given the extent of anthropogenic disturbance (e.g., residential structures, spent shell casings, abundance of trash from illegal dumping, on- and off-highway vehicle related traffic, infrastructure appurtenances [electrical substation, distribution and transmission facilities], paved and native surface access roads) within the Project Site, any species currently using these lands are presumed to be acclimated to the disturbance regime present.

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1 For the purposes of this analysis, “biological resources” refers to the plants, wildlife, and habitats that occur, or have the potential to occur, within the study area.

2 For the purposes of this analysis, “special-status species” refers to any species that has been afforded special protection by federal, state, or local resource agencies (e.g., U.S. Fish and Wildlife Service, California Department of Fish and Wildlife) or resource conservation organizations (e.g., California Native Plant Society). The term “special-status species” excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

3 A “habitat” is defined as the place or type of locale where a plant or animal naturally or normally lives and grows.
2.0 PROPERTY DESCRIPTION

For the purposes of this report, the “study area” includes the Project’s proposed ground disturbance footprint (Project Site) and a buffer (Figure 2). The Project Site includes the solar generating facility footprint and generation tie line locations. As such, the study area includes all lands likely to be affected directly or indirectly by the Project and is not merely the lands directly associated with the proposed ground disturbances. Dominant land cover types within the study area include ruderal, developed, disturbed, and non-native grasslands. Human disturbances within the study area include: fire arm usage; illegal dumping; on- and off-highway vehicle related traffic; residences; road and shoulder maintenance activities; operating electrical substation, distribution and transmission facilities. The Project can be found on the Del Sur United States Geological Survey 7.5-Minute Topographic Quadrangle Map within the San Bernardino Base and Meridian – Township 6 North, Range 13 West, Section 5; Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 28, 29, 30, 31, 32 and 33; and Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26 and 36 (USGS 1980). The elevation of the Project Site ranges from approximately 2,440 to 2,900 ft. above mean sea level.
The Study Area is located on the Del Sur USGS 7.5-minute quadrangle map; San Bernardino Base and Meridian, Township 6 North, Range 13 West, Section 5; Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 28, 29, 30, 31, 32, and 33; and Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26 and 36. Center coordinates for the Study Area are: 34.667017, -118.297662.
Figure 2. Site Vicinity

- Study Area (2,763 acres which includes the Project Site)
- Project Site (1,303 acres)

Data Source:
- Bing accessed Jul 2014,
- image date range: May 2010 – Oct 2011
- Map Prepared: 7-1-14

Prepared by:
- NOREAS (Environmental Engineering over Eastern)
3.0 FOCUSED STUDY/SPECIES OF CONCERN

Prior to beginning field surveys in 2014, technical specialists were consulted and available information from resource management plans and relevant documents were reviewed to determine the locations and types of biological resources that have the potential to exist within and adjacent to the study area. It should be noted that pedestrian based biological surveys were performed within discrete portions of the study area in 2007, 2009, and 2011. Resources were evaluated within several miles of the Project Site. The primary materials reviewed included, but were not limited to, the following:

- U.S. Fish and Wildlife Service (USFWS) Critical Habitat Mapper and File Data (USFWS 2014a);
- USFWS Ventura Field Office Species List for Los Angeles County (USFWS 2014b);
- California Natural Diversity Database maintained by the California Department of Fish and Wildlife (CDFW 2014);
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2014);
- Regional South Coast Missing Linkages Project Report (South Coast Wildlands 2008)
- General Biological Resources Report for the Lancaster Highlands Project (LSA 2007a);
- Jurisdictional Delineation Report for the Lancaster Highlands Project (LSA 2007b);
- Burrowing Owl Breeding Season Survey Results, Lancaster Highlands Project (LSA 2007c);
- Burrowing Owl Breeding Season Survey Results, Lancaster Highlands Project (LSA 2011);
- Biological Technical Report for the Plainview Solar Works Project (NOREAS 2013a);
- Burrowing Owl Survey Report for the Plainview Solar Works Project (NOREAS 2013b); and
- Aerial Photographs (Microsoft Corporation 2014).

The Project Site was also assessed for its potential to support special-status species based on habitat suitability comparisons with reported occupied habitats as well (Appendix A). The following definitions were utilized within Appendix A:

- **Absent [A]** – Species distribution is restricted by substantive habitat requirements which do not occur within the Project Site; no further survey or study is necessary to determine likely presence or absence of this species.

- **Low [L]** – Species distribution is restricted by substantive habitat requirements which are negligible within the Project Site; no further survey or study is necessary to determine likely presence or absence of this species.

- **Habitat Present [HP]** – Species distribution is restricted by substantive habitat requirements which occur within the Project Site; further study may be necessary to determine likely presence or absence of species.

- **Present [P]** – Species or species sign were observed within the Project Site or historically have been documented within Project limits.
• **Critical Habitat [CH]** – The Project Site is located within a USFWS-designated critical habitat unit.
4.0 METHODS

To support the analysis detailed within Section 3.0 above, pedestrian-based field surveys were performed in 2014 to assess general and dominant vegetation community types, community sizes, habitat types, and species present within communities\(^4\). Community type descriptions were based on observed dominant vegetation composition, and derived from the criteria and definitions of widely accepted vegetation classification systems (Holland 1986; Sawyer et al. 2009).

Plants were identified to the lowest taxonomic level sufficient to determine whether the species observed were non-native, native, or special-status. Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common names of plants were recorded according to Baldwin et al. (2012).

The presence of a wildlife species was based on direct observation and/or wildlife sign (e.g., tracks, burrows, nests, scat, or vocalization). Field data compiled for wildlife species included scientific name, common name, and evidence of sign when no direct observations were made. Wildlife of uncertain identity was documented and subsequently identified from specialized field guides and related literature (Burt and Grossenheider 1980; Halfpenny 2000; Sibley 2000 and Stebbins 2003).

Additionally, the study area’s suitability as a wildlife movement and migration corridor was qualitatively analyzed to determine if there is a high potential for it to link together wildlife habitats that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open spaces by urbanization tends to create isolated islands of wildlife habitat. This fragmentation is especially detrimental to species that are subject to localized extirpations due to natural or human-induced causes. Wildlife movement and migration corridors allow for the re-colonization of areas that may have experienced greatly reduced populations, and so forth. Wildlife movement and migration corridors also allow for genetic mixing and flow between otherwise segregated populations of a species. They can be highly variable in size and scope, and facilitate breeding, foraging, or population-level movements across mountain ranges, valleys, etc.

\(^4\) Where 100% pedestrian coverage of the study area was not possible due to limited access (e.g., private property or physical barriers {vegetative cover, health and safety concerns, etc.}), field observations were made from the nearest appropriate vantage points via public right-of-ways with the aid of binoculars and spotting scopes.
5.0 GENERAL BIOLOGICAL SURVEY RESULTS

Weather conditions during the 24, 25 and 30 June and 01, 02 and 03 July 2014 surveys included clear skies, temperatures ranging from 73–101°F, with winds ranging from 0 to 10 miles per hour (mph). Representative photos of the study area are provided in Appendix B.

5.1 Vegetation Communities and Land Cover Types

Eight vegetation communities/land cover types were observed within the study area: Bunchgrass Grassland, Annual Grassland, California Buckwheat Scrub, Disturbed/Developed, Fourwing Saltbush Scrub, Nonnative Woodland, Rabbitbrush Scrub and Ruderal (Figure 3). Cover types are described in detail below. All plant species observed during the 2014 surveys are listed in Appendix C.

Bunchgrass Grassland

Bunchgrass Grassland within the study area is dominated by native purple needlegrass (Stipa pulchra) and co-dominated by introduced annual grasses (e.g., cheat grass [Bromus tectorum] and red brome [Bromus madritensis ssp. Rubens]), as well as native forbs. Only grasslands where the cover of native grasses exceeded 10% of the total cover were designated as Bunchgrass Grassland. This vegetation type may support diverse displays of annual wildflowers in the spring of years with sufficient rainfall.

Annual Grassland

Areas of vegetation dominated primarily by non-native annual grasses and native forbs grasses were designated as Annual Grassland within the study area. Although floristic composition is variable among stands of this vegetation type seasonally, typical dominants detected include cheat grass, red brome, Russian thistle (Salsola sp.), and tall tumble mustard (Sisymbrium altissimum) and native species such as California poppy (Eschscholzia californica), common goldfields (Lasthenia gracilis), and dobie pod (Tropidocarpum gracile). Other abundant species include red-stem stork’s bill (Erodium cicutarium), Arizona popcornflower (Plagiobothrys arizonicus), whitemargin sandmat (Chamaesyce albomarginata), dove weed (Croton setigerus), and vinegarweed (Trichostema lanceolatum). Occasional emergent perennial species present include Mojave rabbitbrush (Ericameria nauseosa var. mohavensis) and California aster (Corethrogyne filaginifolia). In years of favorable rainfall some stands of this vegetation type may support numerous species of native annual spring wildflowers. This is the most common vegetation type within the study area.

California Buckwheat Scrub

California Buckwheat Scrub is dominated by California buckwheat (Eriogonum fasciculatum) within the study area. Other shrub species present within this community at low cover percentages include fourwing saltbush (Atriplex canescens) and Mojave rabbitbrush. The understory is composed of annual grasses and forbs; and include anglestem buckwheat (Eriogonum angulosum), Arabian schismus (Schismus arabicus), wand buckwheat (Eriogonum roseum), annual bur-sage (Ambrosia acanthicarpa), and bristly fiddleneck (Amsinckia tessellata var. tessellata). Within the study area, this vegetation type is restricted to lands adjacent to the California Aqueduct.

Disturbed/Developed

Developed and/or disturbed lands include locales that have been disked, cleared, or otherwise altered by human activities. This cover type within the study area includes on- and off-highway vehicle roads and an
abundance of trash - the likely result of illegal dumping within the region. Residential areas, electrical substation, distribution and transmission facilities, paved and dirt roadways are common features receiving this designation within the study area. Landscaped areas associated with development, were also recorded as Disturbed/Developed cover types; which include scattered non-native annual species, ornamental plantings, and fruit trees.

**Fourwing Saltbush Scrub**

Fourwing saltbush is the dominant shrub within this vegetation community in the study area. Other shrub species observed at lower cover percentages include Mojave rabbitbrush and California buckwheat. Also present – albeit in low numbers, is the emergent tree species western honey mesquite (*Prosopis glandulosa var. torreyana*). The herbaceous layer is sparse and includes scattered Arabian schismus and cheat grass. Within the study area, this vegetation community is restricted to areas along the north end of the California Aqueduct.

**Nonnative Woodland**

Stands of planted non-native tree species such as saltcedar (*Tamarix ramosissima*), olive (*Olea europaea*), and pines (*Pinus* sp.) were labeled as Nonnative Woodland within the study area. Only stands where trees exist as discrete patches received this designation. The understory in this vegetation community are typically composed of non-native annual species such as cheat grass, red brome, salsola, and tall tumble mustard.

**Rabbitbrush Scrub**

Rabbitbrush Scrub vegetation community is dominated by Mojave rabbitbrush within the study area. Other shrub species that are present within this type at low cover include fourwing saltbush, California buckwheat and bladderpod (*Peritoma arborea var. globosa*). Perennial species such as Desert needlegrass (*Stipa speciosa*) and California aster were also occasionally detected within this community. The herbaceous layer is similar to Annual Grassland with non-native annual grasses and native forbs.

**Ruderal**

The Ruderal vegetation community includes lands that have been subject to ground disturbance in the past, and areas dominated by non-native species within the study area. It differs from the Annual Grassland community as it lacks a conspicuous native annual floristic component. The dominant species in the Ruderal vegetation community include non-native grasses such as cheat grass and red brome, Russian thistle (*Salsola* sp.), tall tumble mustard, horseweed (*Conyza canadensis*), and red-stem stork’s bill.

**5.2 Wildlife**

Wildlife species observed within the study area consisted of commonly-occurring species, including, but not limited to, Common Raven (*Corvus corax*) House Finch (*Carpodacus mexicanus*), Mourning Dove (*Zenaida macroura*) Red-Tailed Hawk (*Buteo jamaicensis*), Antelope Ground Squirrel (*Ammospermophilus leucurus*), and Side-blotched Lizard (*Uta stansburiana*). All wildlife detected during the 2014 surveys are identified in Appendix D.
5.3 Special-Status Plants

No state- or federally-listed plant species have been detected during any of pedestrian based biological surveys which were performed within discrete portions of the study area in 2007, 2009, 2011 and 2014. Additionally no special-status plants were detected within the Project Site during the June and July 2014 field surveys, and none have been documented within 1 mile (Figure 4).

However, under the appropriate environmental conditions, the Project Site could support the following special status plant species: Peirson’s Morning-Glory (*Calystegia peirsonii*), Slender Mariposa-Lily (*Calochortus clavatus var. gracilis*), Round-Leaved Filaree (*California macrophylla*), Pale-Yellow Layia (*Layia heterotricha*), Parry’s Spineflower (*Chorizanthe parryi var. parryi*), White Pygmy-Poppy (*Canbya candida*), California androsace (*Androsace elongata L. ssp. Acuta*), Mojave Spineflower (*Chorizanthe spinosa*) and Mojave paintbrush (*Castilleja plagiotoma*). It should be noted that none of the aforementioned species are state or federally listed as threatened, endangered, or proposed for such listings. Special-status plants known to occur within 10 miles of the Project and their potential for occurrence are detailed within Appendix A. The study area includes no USFWS-critical habitat for plants (Figure 5).

5.4 Special-Status Wildlife

No state- or federally-listed wildlife species have been detected during any of the pedestrian based biological surveys which were performed within discrete portions of the study area in 2007, 2009, 2011 and 2014. Ferruginous Hawk (*Buteo regalis*), Burrowing Owl (*Athene cunicularia*) and Loggerhead shrike (*Lanius ludovicianus*) have been historically documented within the study area. Burrowing Owl and Loggerhead shrike were observed within the Project Site during the June and July 2014 field survey events (Figure 4). Furthermore, under the appropriate environmental conditions, the Project Site could support the following special status species: Coast Horned Lizard (*Phrynosoma blainvillii*), and Swainson’s Hawk (*Buteo swainsoni*). It should be noted that none of the aforementioned species are state or federally listed, with the exception of Swainson’s Hawk. The nearest recorded Swainson’s Hawk nest site is roughly 1.2 miles from the Project. Special-status wildlife species known to occur within 10 miles of the Project and their potential for occurrence are detailed within Appendix A. The study area includes no USFWS-critical habitat for wildlife species (Figure 5).

5.5 Wildlife Corridors

Greater than 60% of Project Site consists of non-native vegetation, developed, disturbed and ruderal land cover types. Accordingly, the Project Site is unlikely to contribute functionally to substantial wildlife movement locally, or to be considered a regional linkage area that would be anticipated to facilitate the dispersal of plants and animals in significant numbers. This is possibly a result of the study area being situated within an anthropogenically influenced environment, adjacent to residences, commercial scale industrial enterprises, on - and off-highway vehicle related traffic, infrastructure appurtenances, paved and native surface roads. Since the Project Site does not include notable concentrations of regionally unique or sensitive habitats, the lands within it would not be considered essential for long-term plant and wildlife viability within the region (Penrod, K., P. Beier, E. Garding, and C. Cabañero. 2012).

5.6 Wetlands and Waterways

The National Wetland Inventory includes records of special aquatic resource areas within the Project Site (Figure 6). No riparian habitats were observed within the Project Site, however obvious indicators of well-
defined water conveyance bed, bank, or channel features that would be assumed to provide unique functions and values for wildlife were detected within the study area.
Vegetation Communities and Land Cover Types

- Annual Grassland (2,297.2 acres)
- Bunchgrass Grassland (0.5 acre)
- California Buckwheat Scrub (4.7 acres)
- Developed/Disturbed (208.7 acres)
- Fourwing Saltbush Scrub (1.9 acres)
- Nonnative Woodland (8.1 acres)
- Rabbitbrush Scrub (73.6 acres)
- Ruderal (168.6 acres)

Map Prepared: 7-16-14

Data Source:
- Bing accessed Jul 2014, image date range: May 2010 - Oct 2011

1 inch = 2,000 feet

Prepared by:

Figure 3. Vegetation Communities and Land Cover Types
Special-Status Species Occurrences

10-Mile Radius Around the Study Area

Data Sources:
- Bing accessed Jul 2014

Note: Resource specialists were consulted and readily available commercial data from resource management plans and other relevant documents were reviewed to determine the locations and types of resources that have the potential to exist in the region.

Study Area

1. Alkali Mariposa-Lily (Calochortus striatus)
2. Cleekey's Cryptantha (Cryptantha cleekeyi)
3. Lancaster Milk-Vetch (Astragalus preussii var. laxiflorus)
4. Lincoln Rockcress (Boechera incultilistis)
5. Pale-Yellow Layia (Layia heterotricha)
6. Parny's Spineflower (Chorizanthe parnyi var. parnyi)
7. Peirson's Monkey-Glory (Calystegia peirsonii)
8. Rosamond Blaustem (Elastemium mssamdense)
9. Round-Leaved Filaree (California macrophylla)
10. Sagebrush Loeflingia (Loeflingia squarrosa var. artemisiana)
11. San Fernando Valley Spineflower (Chorizanthe parnyi var. fernandina)
12. Short-Jointed Beaverlail (Opuntia basilaris var. b.rachycida)
13. Slender Mariposa-Lily (Calochortus clavatus var. gracilis)
14. White Pygmy-Poppy (Canbya candida)

Amphibians
15. California Red-Legged Frog (Rana draytonii)

Reptiles
16. Coast Horned Lizard (Phrynosoma blainvillii)
17. Roxy Boa (Charina triungula)
18. Silvery Legless Lizard (Anniella pulchra pulchra)
19. Two-Striped Garter Snake (Thamnophis hammondi)
20. Western Pond Turtle (Emys marmorata)

Birds
21. Bald Eagle (Haliaeetus leucocephalus)
22. Bell's Sage Sparrow (Artemisiospiza belli belli)
23. Burrowing Owl (Athene cunicularia)
24. Cooper's Hawk (Accipiter cooperii)
25. Ferruginous Hawk (Buteo regalis)
26. Golden Eagle (Aquila chrysaetos)
27. Le Conte's Thrasher (Toxostoma lecontei)
28. Least Bell's Vireo (Vireo bellii pusillus)
29. Loggerhead Shrike (Lanius ludovicianus)
30. Merlin (Falco columbarius)
31. Mountain Plover (Charadrius montanus)
32. Prairie Falcon (Falco mexicanus)
33. Southern California Rufous-Crowned Sparrow (Aimophila ruficeps canescens)
34. Swainson's Hawk (Buteo swainsonii)

Mammals
35. American Badger (Taxidea taxus)
36. Hoary Bat (Lasiurus cinereus)
37. Lodgepole Chipmunk (Neotamias speciosus speciosus)
38. Mohave Ground Squirrel (Xenospermophilus mohavensis)
39. San Joaquin Pocket Mouse (Perognathus inornatus inornatus)
40. Tehachapi Pocket Mouse (Perognathus albicollis ineuctabtus)

Fish
41. Unarmored Threespine Stickleback (Gasterosteus aculeatus williamsoni)

Data Sources:
- Bing accessed Jul 2014

Note: Resource specialists were consulted and readily available commercial data from resource management plans and other relevant documents were reviewed to determine the locations and types of resources that have the potential to exist in the region.

Figure 4. Literature Review
Figure 5. Critical Habitat
Figure 6. National Wetland Inventory
6.0 IMPACTS AND RECOMMENDATIONS

Given that greater than 60% of Project Site consists of non-native vegetation, developed, disturbed and ruderal land cover types; it is assumed that any species currently using these locales are acclimated to the disturbance regime present. Furthermore, the Project does not include any USFWS-designated critical habitat for plants or animals; and no state- or federally-listed species have been detected during any of the biological surveys performed in 2007, 2009, 2011 and 2014.

Two special-status species were detected within the Project Site in 2014 (i.e., Burrowing Owl and Loggerheaded shrike), and under the appropriate environmental conditions, the study area could include the minimal substantive habitat requirements needed to support several other common and special-status species. Habitat quality is low for reproductive purposes, breeding, rearing, nesting, roosting, refuge and foraging activities due to the amount of similar, but higher-quality and irrigated habitats available within the region.

The following thresholds of impact significance are based on California Environmental Quality Act (CEQA) Guidelines. As such, the Project would have a significant impact on biological resources if it would result in any of the following:

- 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 California Department of Fish and Game or the U.S. Fish and Wildlife Service?

- 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?

- 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?

- 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?

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Our analysis suggests that the following potential effects to biological resources are less than significant, or did not have an effect, and therefore do not need to be further evaluated:

- The Project would not be expected to 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.
The Project would not be expected to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Project would not be anticipated to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The Project shall comply with all applicable codes, laws, ordinances, and regulations to minimize or avoid adverse effects to state and federally-listed animals, or species proposed for listing to the greatest extent practical. Furthermore, any other projects – even if not planned at the present time, would also be required to comply with the same local, state, and federal codes, ordinances, laws, and other required regulations. Therefore, this Project’s incremental contribution to cumulative effects on common, special status species or their habitats is not expected to be considerable either.

NOREAS also recommends the collection of additional empirical data associated the presence or absence of regulated waterways, and special status species (i.e., Ferruginous Hawk, Burrowing Owl, Loggerhead shrike, Coast Horned Lizard, Swainson’s Hawk, Peirson’s Morning-Glory, Slender Mariposa-Lily, Round-Leaved Filaree, Pale-Yellow Layia, Parry’s Spineflower, White Pygmy-Poppy, California androsace, Mojave spineflower and Mojave paintbrush) to further assess the Project’s expected effects to biological resources.
7.0 PROPOSED MEASURES

The following measures are recommended as a means of avoiding and minimizing adverse impacts to protected resources that have the potential to occur within the Project Site and on adjacent lands:

- The data presented with this document and its appendices suggest that the Project has potential to impact lands that could be utilized by special status species; even though the study area does not include any USFWS critical habitat for plants or animals. If adverse impacts cannot be avoided to potential habitat for Ferruginous Hawk, Burrowing Owl, Loggerhead shrike, Coast Horned Lizard, Swainson's Hawk, Peirson's Morning-Glory, Slender Mariposa-Lily, Round-Leaved Filaree, Pale-Yellow Layia, Parry's Spineflower, White Pygmy-Poppy, California androsace, Mojave spineflower and Mojave paintbrush, then sPower should survey for these resources during the appropriate detection period within the Project Site to ascertain their presence or absence. If pedestrian based survey efforts for the species are negative, there would be no presumption that the Project would result in the loss of individuals, or that it would adversely affect local or regional populations of them.

- In order to comply with Section 10 of the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code, any vegetation clearing within the Project Site should take place outside of the typical avian nesting season (e.g., March 15th until September 1st) – to the maximum extent practical. If work needs to take place between March 15th and September 1st, a pre-construction survey for nesting passerines and raptors should be completed prior to the onset of Project activities. To the maximum extent practicable, a buffer zone from occupied nests should be maintained during physical ground disturbing activities. Once nesting has ended, the buffer may be removed.

- The Project Site includes numerous small drainage features that were distinguishable by physical characteristics. If adverse effects to them cannot be avoided, then sPower should delineate these features and notify the appropriate regulatory agency prior to affecting them to determine which, if any, discretionary approvals are needed. The information presented herein implies that impacts to regulated waters, riparian habitats or sensitive natural communities would be considered less than significant provided that discretionary approvals ensure no net loss of these resources. Coordination with appropriate resource agencies (i.e., US Army Corps of Engineers, Regional Water Quality Control Board, CA Department of Fish and Wildlife), would make certain that surface disturbing activities result in no net loss of protected resources.

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied, and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data and actual conditions may vary from those encountered at the times and locations where the data were obtained despite due professional care.
8.0 REFERENCES


CDFW (California Department of Fish and Wildlife). 2014. RareFind. California Department of Fish and Game, Natural Diversity Database (CNDDB). Sacramento, CA: California Department of Fish and Game, Biogeographic Data Branch.

CNPS (California Native Plant Society). 2014. CNPS Electronic Inventory of Rare and Endangered Plants: CNPS.


LSA. 2007a. General Biological Resources Report for the Lancaster Highlands Project.


LSA. 2007c. Burrowing Owl Breeding Season Survey Results, Lancaster Highlands Project.

LSA. 2011. Burrowing Owl Breeding Season Survey Results, Lancaster Highlands Project.

Microsoft Corporation. 2014. Bing Maps Aerial Imagery. Redmond, WA


USGS (United States Geological Service). 1980. 7.5-Minute Quadrangle Del Sur California.

APPENDIX A

SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE

WITHIN THE PROJECT SITE
## APPENDIX A

### SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE WITHIN THE PROJECT SITE

<table>
<thead>
<tr>
<th>Potential for occurrence</th>
<th>Common name (Scientific name)</th>
<th>Federal listing status</th>
<th>State listing status</th>
<th>Global rank</th>
<th>State rank</th>
<th>CNPS list</th>
<th>Records within 10 miles</th>
<th>Year(s) sighted</th>
<th>Distance from Project Site (miles)</th>
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<tr>
<td>P</td>
<td>Burrowing Owl (Athene cunicularia)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S3</td>
<td>-</td>
<td>35</td>
<td>1993-2013</td>
<td>Observed within the Project Site</td>
</tr>
<tr>
<td>HP</td>
<td>Ferruginous Hawk (Buteo regalis)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S3S4</td>
<td>-</td>
<td>17</td>
<td>1998-2011</td>
<td>Potentially Onsite</td>
</tr>
<tr>
<td>HP</td>
<td>Coast Horned Lizard (Phrynosoma blainvillii)</td>
<td>None</td>
<td>None</td>
<td>G3G4</td>
<td>S3S4</td>
<td>-</td>
<td>21</td>
<td>1958-2010</td>
<td>0.3</td>
</tr>
<tr>
<td>HP</td>
<td>Swainson's Hawk (Buteo swainsoni)</td>
<td>None</td>
<td>Threatened</td>
<td>G5</td>
<td>S3</td>
<td>-</td>
<td>11</td>
<td>1927-2012</td>
<td>1.2</td>
</tr>
<tr>
<td>A</td>
<td>Short-Joint Beavertail (Opuntia basilaris var. brachycladula)</td>
<td>None</td>
<td>None</td>
<td>G5T3</td>
<td>S3</td>
<td>1B.2</td>
<td>12</td>
<td>1989-2010</td>
<td>1.3</td>
</tr>
<tr>
<td>HP</td>
<td>Peirson's Morning-Glory (Calystegia peirsonii)</td>
<td>None</td>
<td>None</td>
<td>G3</td>
<td>S3.2</td>
<td>4.2</td>
<td>12</td>
<td>1972-1982</td>
<td>1.8</td>
</tr>
<tr>
<td>L</td>
<td>Mountain Plover (Charadrius montanus)</td>
<td>None</td>
<td>None</td>
<td>G3</td>
<td>S2?</td>
<td>-</td>
<td>7</td>
<td>1999-2011</td>
<td>1.8</td>
</tr>
<tr>
<td>HP</td>
<td>Slender Mariposa-Lily (Calochortus clavatus var. gracilis)</td>
<td>None</td>
<td>None</td>
<td>G4T2T3</td>
<td>S2S3</td>
<td>1B.2</td>
<td>12</td>
<td>1922-2010</td>
<td>2.2</td>
</tr>
<tr>
<td>A</td>
<td>California Red-Legged Frog (Rana draytonii)</td>
<td>Threatened</td>
<td>None</td>
<td>G2G3</td>
<td>S2S3</td>
<td>-</td>
<td>1</td>
<td>1995</td>
<td>2.8</td>
</tr>
<tr>
<td>A</td>
<td>Silvery Legless Lizard (Anniella pulchra pulchra)</td>
<td>None</td>
<td>None</td>
<td>G3G4T3T4Q</td>
<td>S3</td>
<td>-</td>
<td>6</td>
<td>1988-2009</td>
<td>2.9</td>
</tr>
<tr>
<td>A</td>
<td>Alkali Mariposa-Lily (Calochortus striatus)</td>
<td>None</td>
<td>None</td>
<td>G2</td>
<td>S2</td>
<td>1B.2</td>
<td>17</td>
<td>1988-2011</td>
<td>3.0</td>
</tr>
<tr>
<td>A</td>
<td>Two-Striped Garter Snake (Thamnophis hammondii)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S3S4</td>
<td>-</td>
<td>3</td>
<td>1995-2008</td>
<td>3.1</td>
</tr>
<tr>
<td>A</td>
<td>Western Pond Turtle (Emys marmorata)</td>
<td>None</td>
<td>None</td>
<td>G3G4</td>
<td>S3</td>
<td>-</td>
<td>3</td>
<td>1990-1999</td>
<td>3.1</td>
</tr>
<tr>
<td>A</td>
<td>Clokey's Cryptantha (Cryptantha clokeyi)</td>
<td>None</td>
<td>None</td>
<td>G2</td>
<td>S2</td>
<td>1B.2</td>
<td>1</td>
<td>2003</td>
<td>3.5</td>
</tr>
<tr>
<td>HP</td>
<td>Round-Leaved Filaree (California macrophylla)</td>
<td>None</td>
<td>None</td>
<td>G2</td>
<td>S2</td>
<td>1B.1</td>
<td>1</td>
<td>1888</td>
<td>3.5</td>
</tr>
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</table>
### APPENDIX A

**SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE WITHIN THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Potential for occurrence</th>
<th>Common name (Scientific name)</th>
<th>Federal listing status</th>
<th>State listing status</th>
<th>Global rank</th>
<th>State rank</th>
<th>CNPS list</th>
<th>Records within 10 miles</th>
<th>Year(s) sighted</th>
<th>Distance from Project Site (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>San Fernando Valley Spineflower (<em>Chorizanthe parryi var. fernandina</em>)</td>
<td>Candidate</td>
<td>Endangered</td>
<td>G2T1</td>
<td>S1</td>
<td>1B.1</td>
<td>1</td>
<td>1929</td>
<td>3.5</td>
</tr>
<tr>
<td>A</td>
<td>Tehachapi Pocket Mouse (<em>Perognathus alticolus inexpectatus</em>)</td>
<td>None</td>
<td>None</td>
<td>G1G2T1T2</td>
<td>S1S2</td>
<td>-</td>
<td>1</td>
<td>1938</td>
<td>3.5</td>
</tr>
<tr>
<td>A</td>
<td>Bald Eagle (<em>Haliaeetus leucocephalus</em>)</td>
<td>Delisted</td>
<td>Endangered</td>
<td>G5</td>
<td>S2</td>
<td>-</td>
<td>1</td>
<td>2009</td>
<td>4.3</td>
</tr>
<tr>
<td>A</td>
<td>Southern California Rufous-Crowned Sparrow (<em>Aimophila ruficeps canescens</em>)</td>
<td>None</td>
<td>None</td>
<td>GST3</td>
<td>S2S3</td>
<td>-</td>
<td>2</td>
<td>2005</td>
<td>4.3</td>
</tr>
<tr>
<td>A</td>
<td>Bell's Sage Sparrow (<em>Artemisiospiza bellii</em>)</td>
<td>None</td>
<td>None</td>
<td>G1T2T4</td>
<td>S2?</td>
<td>-</td>
<td>1</td>
<td>2005</td>
<td>4.4</td>
</tr>
<tr>
<td>A</td>
<td>Lodgepole Chipmunk (<em>Neotamias speciosus speciosus</em>)</td>
<td>None</td>
<td>None</td>
<td>G4T2T3</td>
<td>S2S3</td>
<td>-</td>
<td>1</td>
<td>1974</td>
<td>4.9</td>
</tr>
<tr>
<td>L</td>
<td>American Badger (<em>Taxidea taxus</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S4</td>
<td>-</td>
<td>2</td>
<td>1904-1988</td>
<td>5.4</td>
</tr>
<tr>
<td>A</td>
<td>Rosamond Eriastrum (<em>Eriastrum rosamondense</em>)</td>
<td>None</td>
<td>None</td>
<td>G1</td>
<td>S1</td>
<td>1B.1</td>
<td>4</td>
<td>1993-2010</td>
<td>5.9</td>
</tr>
<tr>
<td>L</td>
<td>Hoary Bat (<em>Lasiurus cinereus</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S4?</td>
<td>-</td>
<td>1</td>
<td>1938</td>
<td>6.0</td>
</tr>
<tr>
<td>L</td>
<td>Lancaster Milk-Vetch (<em>Astragalus preussii var. laxiflorus</em>)</td>
<td>None</td>
<td>None</td>
<td>G4T2</td>
<td>S1</td>
<td>1B.1</td>
<td>1</td>
<td>1902</td>
<td>7.0</td>
</tr>
<tr>
<td>HP</td>
<td>Pale-Yellow Layia (<em>Layia heterotricha</em>)</td>
<td>None</td>
<td>None</td>
<td>G2</td>
<td>S2</td>
<td>1B.1</td>
<td>1</td>
<td>1895</td>
<td>7.0</td>
</tr>
<tr>
<td>HP</td>
<td>Parry's Spineflower (<em>Chorizanthe parryi var. parryi</em>)</td>
<td>None</td>
<td>None</td>
<td>G3T3</td>
<td>S3</td>
<td>1B.1</td>
<td>1</td>
<td>1896</td>
<td>7.0</td>
</tr>
<tr>
<td>HP</td>
<td>White Pygmy-Poppy (<em>Canbya candida</em>)</td>
<td>None</td>
<td>None</td>
<td>G3</td>
<td>S3.2</td>
<td>4.2</td>
<td>1</td>
<td>Unknown</td>
<td>7.0</td>
</tr>
<tr>
<td>A</td>
<td>Merlin (<em>Falco columbarius</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S3</td>
<td>-</td>
<td>3</td>
<td>1998-2011</td>
<td>7.0</td>
</tr>
<tr>
<td>A</td>
<td>Least Bell's Vireo (<em>Vireo bellii pusillus</em>)</td>
<td>Endangered</td>
<td>Endangered</td>
<td>GST2</td>
<td>S2</td>
<td>-</td>
<td>1</td>
<td>2006</td>
<td>7.1</td>
</tr>
<tr>
<td>A</td>
<td>Mohave Ground Squirrel (<em>Xerormophilus mohavensis</em>)</td>
<td>None</td>
<td>Threatened</td>
<td>G2G3</td>
<td>S2S3</td>
<td>-</td>
<td>2</td>
<td>1944-1984</td>
<td>7.5</td>
</tr>
<tr>
<td>A</td>
<td>Sagebrush Loeflingia (<em>Loeflingia squarroso var. artemisiarum</em>)</td>
<td>None</td>
<td>None</td>
<td>GST2T3</td>
<td>S2.2</td>
<td>2B.2</td>
<td>2</td>
<td>Unknown-2005</td>
<td>7.8</td>
</tr>
<tr>
<td>HP</td>
<td>Loggerhead Shrike (<em>Lanius ludovicianus</em>)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S4</td>
<td>-</td>
<td>3</td>
<td>2008-2009</td>
<td>8.1</td>
</tr>
<tr>
<td>A</td>
<td>Golden Eagle (<em>Aquila chrysaetos</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S3</td>
<td>-</td>
<td>2</td>
<td>1998-2010</td>
<td>8.4</td>
</tr>
</tbody>
</table>
### APPENDIX A

**SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE WITHIN THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Potential for occurrence</th>
<th>Common name (Scientific name)</th>
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<th>State listing status</th>
<th>Global rank</th>
<th>State rank</th>
<th>CNPS list</th>
<th>Records within 10 miles</th>
<th>Year(s) sighted</th>
<th>Distance from Project Site (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Le Conte’s Thrasher (<em>Toxostoma lecontei</em>)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S3</td>
<td>-</td>
<td>1</td>
<td>1920</td>
<td>9.1</td>
</tr>
<tr>
<td>L</td>
<td>San Joaquin Pocket Mouse (<em>Perognathus inornatus inornatus</em>)</td>
<td>None</td>
<td>None</td>
<td>G4T2T3</td>
<td>S2S3</td>
<td>-</td>
<td>1</td>
<td>1931</td>
<td>9.1</td>
</tr>
<tr>
<td>A</td>
<td>Unarmored Threespine Stickleback (<em>Gasterosteus aculeatus williamsoni</em>)</td>
<td>Endangered</td>
<td>Endangered</td>
<td>GST1</td>
<td>S1</td>
<td>-</td>
<td>1</td>
<td>2005</td>
<td>9.1</td>
</tr>
<tr>
<td>A</td>
<td>Rosy Boa (<em>Charina trivirgata</em>)</td>
<td>None</td>
<td>None</td>
<td>G4G5</td>
<td>S3S4</td>
<td>-</td>
<td>1</td>
<td>2009</td>
<td>9.5</td>
</tr>
<tr>
<td>L</td>
<td>Cooper’s Hawk (<em>Accipiter cooperii</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S3</td>
<td>-</td>
<td>1</td>
<td>1921</td>
<td>9.7</td>
</tr>
<tr>
<td>A</td>
<td>Lincoln Rockcress (<em>Boechera lincolnensis</em>)</td>
<td>None</td>
<td>None</td>
<td>G4</td>
<td>S2</td>
<td>2B.3</td>
<td>1</td>
<td>2005</td>
<td>9.8</td>
</tr>
<tr>
<td>L</td>
<td>Prairie Falcon (<em>Falco mexicanus</em>)</td>
<td>None</td>
<td>None</td>
<td>G5</td>
<td>S4</td>
<td>-</td>
<td>1</td>
<td>1977</td>
<td>9.9</td>
</tr>
<tr>
<td>HP</td>
<td>California androsace (<em>Androsace elongata L. ssp. Acuta</em>)</td>
<td>None</td>
<td>None</td>
<td>GST3T4</td>
<td>S3.2</td>
<td>4.2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HP</td>
<td>Mojave spineflower (<em>Chorizanthe spinosa</em>)</td>
<td>None</td>
<td>None</td>
<td>G3</td>
<td>S3.2</td>
<td>4.2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HP</td>
<td>Mojave paintbrush (<em>Castilleja plagiotoma</em>)</td>
<td>None</td>
<td>None</td>
<td>G3</td>
<td>S3.3</td>
<td>4.3</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

**GLOBAL RANKING**

The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range. The global rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.

**SPECIES OR NATURAL COMMUNITY LEVEL**

- **G1** = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.
- **G2** = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
- **G3** = 21-100 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
- **G4** = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.
- **G5** = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

**STATE RANKING**

The state rank is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

- **S1** = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres
  - **S1.1** = very threatened
  - **S1.2** = threatened
  - **S1.3** = no current threats known
- **S2** = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
  - **S2.1** = very threatened
  - **S2.2** = threatened
  - **S2.3** = no current threats known
- **S3** = 21-100 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
  - **S3.1** = very threatened
  - **S3.2** = threatened
  - **S3.3** = no current threats known
- **S4** = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat. NO THREAT RANK.
- **S5** = Demonstrably secure to ineradicable in California. NO THREAT RANK.
### APPENDIX A

**SPECIAL-STATUS SPECIES POTENTIAL FOR OCCURRENCE WITHIN THE PROJECT SITE**

<table>
<thead>
<tr>
<th>Potential for occurrence</th>
<th>Common name (Scientific name)</th>
<th>Federal listing status</th>
<th>State listing status</th>
<th>Global rank&lt;sup&gt;a&lt;/sup&gt;</th>
<th>State rank&lt;sup&gt;b&lt;/sup&gt;</th>
<th>CNPS list&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Records within 10 miles</th>
<th>Year(s) sighted</th>
<th>Distance from Project Site (miles)</th>
</tr>
</thead>
</table>

<sup>a</sup> CNPS LIST - Indicates the California Native Plant Society (CNPS) list to which the taxon is assigned (plants only).

List 1A: Plants presumed extinct in California
List 1B.1: Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
List 1B.2: Plants rare, threatened, or endangered in California and elsewhere, fairly threatened in California
List 1B.3: Plants rare, threatened, or endangered in California and elsewhere, not very threatened in California
List 2.1: Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
List 2.2: Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
List 2.3: Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
List 3.1: Plants about which we need more information; seriously threatened in California
List 3.2: Plants about which we need more information; fairly threatened in California
List 3.3: Plants about which we need more information; not very threatened in California
List 4.1: Plants of limited distribution; seriously threatened in California
List 4.2: Plants of limited distribution; fairly threatened in California
List 4.3: Plants of limited distribution; not very threatened in California

N/A = Data not available
APPENDIX B

PHOTOGRAPHIC LOG
## APPENDIX B

### PHOTOGRAPHIC LOG

<table>
<thead>
<tr>
<th>Photograph: 1, facing east.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Photograph 1" /></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Photograph: 2, facing north.</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2.jpg" alt="Photograph 2" /></td>
</tr>
</tbody>
</table>

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### APPENDIX B

**PHOTOGRAPHIC LOG**

<table>
<thead>
<tr>
<th>Photograph: 3, facing north.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photograph: 4, facing east.</td>
</tr>
<tr>
<td>Photograph: 5, facing east.</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Photograph: 6, Owl burrow with fresh white wash.</td>
</tr>
</tbody>
</table>
APPENDIX C

PLANT SPECIES OBSERVED WITHIN THE STUDY AREA
## PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYMNOSPERMS</strong></td>
<td></td>
</tr>
<tr>
<td>Cupressaceae (Cypress family)</td>
<td></td>
</tr>
<tr>
<td>Juniperus californica</td>
<td>California juniper</td>
</tr>
<tr>
<td>Pinaceae (Pine family)</td>
<td></td>
</tr>
<tr>
<td>Pinus sp.*</td>
<td>Pine</td>
</tr>
<tr>
<td><strong>EUDICOTS</strong></td>
<td></td>
</tr>
<tr>
<td>Adoxaceae (Muskroot family)</td>
<td></td>
</tr>
<tr>
<td>Sambucus nigra subsp. caerulea</td>
<td>Mexican elderberry</td>
</tr>
<tr>
<td>Amaranthaceae (Amaranth family)</td>
<td></td>
</tr>
<tr>
<td>Amaranthus albus*</td>
<td>Prostrate pigweed</td>
</tr>
<tr>
<td>Amaranthus blitoides</td>
<td>Mat amaranth</td>
</tr>
<tr>
<td>Apocynaceae (Dogbane family)</td>
<td></td>
</tr>
<tr>
<td>Asclepias erosa</td>
<td>Desert milkweed</td>
</tr>
<tr>
<td>Asteraceae (Aster family)</td>
<td></td>
</tr>
<tr>
<td>Ambrosia acantha carpa</td>
<td>Annual bur-sage</td>
</tr>
<tr>
<td>Baccharis salicifolia subsp. salicifolia</td>
<td>Mule fat</td>
</tr>
<tr>
<td>Corethogyne filaginifolia</td>
<td>California aster</td>
</tr>
<tr>
<td>Encelia actoni</td>
<td>Acton encelia</td>
</tr>
<tr>
<td>Ericameria cooperi var. cooperi</td>
<td>Cooper’s goldenbush</td>
</tr>
<tr>
<td>Ericameria linearifolia</td>
<td>Narrowleaf goldenbush</td>
</tr>
<tr>
<td>Ericameria nauseosa var. mohavensis</td>
<td>Mojave rabbitbrush</td>
</tr>
<tr>
<td>Erigeron canadensis</td>
<td>Canadian horseweed</td>
</tr>
</tbody>
</table>
## APPENDIX C

### PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Erigeron foliosus</em></td>
<td>Leafy fleabane</td>
</tr>
<tr>
<td><em>Helianthus annuus</em></td>
<td>Common sunflower</td>
</tr>
<tr>
<td><em>Heterotheca sessiliflora subsp. echioides</em></td>
<td>Sessile-flower goldenaster</td>
</tr>
<tr>
<td><em>Lactuca serriola</em></td>
<td>Prickly lettuce</td>
</tr>
<tr>
<td><em>Lasthenia gracilis</em></td>
<td>Needle goldfields</td>
</tr>
<tr>
<td><em>Lepidospartum squamatum</em></td>
<td>California scale broom</td>
</tr>
<tr>
<td><em>Senecio flaccidus</em></td>
<td>Threadleaf ragwort</td>
</tr>
<tr>
<td><em>Stephanomeria exigua subsp. coronaria</em></td>
<td>Wirelettuce</td>
</tr>
<tr>
<td><em>Stylocline sp.</em></td>
<td>Neststraw</td>
</tr>
<tr>
<td><em>Uropappus lindleyi</em></td>
<td>Lindley's silverpuffs</td>
</tr>
<tr>
<td><strong>Boraginaceae (Borage family)</strong></td>
<td></td>
</tr>
<tr>
<td><em>Amsinckia tessellata var. tessellata</em></td>
<td>Bristly fiddleneck</td>
</tr>
<tr>
<td><em>Cryptantha nevadensis var. rigida</em></td>
<td>Nevada cryptantha</td>
</tr>
<tr>
<td><em>Pectocarya linearis subsp. ferocula</em></td>
<td>Narrow-toothed pectocarya</td>
</tr>
<tr>
<td><em>Phacelia imbricata subsp. imbricata</em></td>
<td>Imbricate phacelia</td>
</tr>
<tr>
<td><em>Plagiobothrys arizonicus</em></td>
<td>Arizona popcornflower</td>
</tr>
<tr>
<td><strong>Brassicaceae (Mustard family)</strong></td>
<td></td>
</tr>
<tr>
<td><em>Hirschfeldia incana</em></td>
<td>Shortpod mustard</td>
</tr>
<tr>
<td><em>Lepidium lasiocarpum subsp. lasiocarpum</em></td>
<td>Shaggyfruit pepperweed</td>
</tr>
<tr>
<td><em>Sisymbrium altissimum</em></td>
<td>Tall tumblemustard</td>
</tr>
<tr>
<td><em>Tropidocarpum gracile</em></td>
<td>Dobie pod</td>
</tr>
<tr>
<td><strong>Chenopodiaceae (Goosefoot family)</strong></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix C

### Plant Species Observed Within the Study Area

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Atriplex canescens</em></td>
<td>Fourwing saltbush</td>
</tr>
<tr>
<td><em>Atriplex lentiformis</em></td>
<td>Big saltbush</td>
</tr>
<tr>
<td><em>Chenopodium berlandieri</em></td>
<td>Pitseed goosefoot</td>
</tr>
<tr>
<td><em>Salsola sp.</em> *</td>
<td>Russian thistle</td>
</tr>
<tr>
<td>Cleomaceae (Spiderflower family)</td>
<td></td>
</tr>
<tr>
<td><em>Peritoma arborea var. globosa</em></td>
<td>Bladderpod</td>
</tr>
<tr>
<td>Cucurbitaceae (Cucumber family)</td>
<td></td>
</tr>
<tr>
<td><em>Cucurbita foetidissima</em></td>
<td>Missouri gourd</td>
</tr>
<tr>
<td>Euphorbiaceae (Spurge family)</td>
<td></td>
</tr>
<tr>
<td><em>Chamaesyce albomarginata</em></td>
<td>Whitemargin sandmat</td>
</tr>
<tr>
<td><em>Croton setigerus</em></td>
<td>Dove weed</td>
</tr>
<tr>
<td>Fabaceae (Pea family)</td>
<td></td>
</tr>
<tr>
<td><em>Caesalpinia gilliesii</em> *</td>
<td>Bird-of-paradise shrub</td>
</tr>
<tr>
<td><em>Lupinus bicolor</em></td>
<td>Miniature lupine</td>
</tr>
<tr>
<td><em>Prosopis glandulosa var. torreyana</em></td>
<td>Western honey mesquite</td>
</tr>
<tr>
<td><em>Robinia pseudoacacia</em> *</td>
<td>Black locust</td>
</tr>
<tr>
<td>Geraniaceae (Geranium family)</td>
<td></td>
</tr>
<tr>
<td><em>Erodium cicutarium</em> *</td>
<td>Redstem stork's bill</td>
</tr>
<tr>
<td>Lamiaceae (Mint family)</td>
<td></td>
</tr>
<tr>
<td><em>Marrubium vulgare</em> *</td>
<td>Horehound</td>
</tr>
<tr>
<td><em>Salvia columbariae</em></td>
<td>Chia</td>
</tr>
<tr>
<td><em>Salvia mellifera</em></td>
<td>Black sage</td>
</tr>
</tbody>
</table>
## PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Trichostema lanceolatum</em></td>
<td>Vinegarweed</td>
</tr>
<tr>
<td><strong>Nyctaginaceae</strong> (Four o'clock family)</td>
<td></td>
</tr>
<tr>
<td><em>Mirabilis laevis</em></td>
<td>Desert wishbone-bush</td>
</tr>
<tr>
<td><em>Mirabilis multiflora var. pubescens</em></td>
<td>Colorado four o'clock</td>
</tr>
<tr>
<td><strong>Oleaceae</strong> (Olive family)</td>
<td></td>
</tr>
<tr>
<td><em>Olea europaea</em></td>
<td>Olive</td>
</tr>
<tr>
<td><strong>Onagraceae</strong> (Evening Primrose family)</td>
<td></td>
</tr>
<tr>
<td><em>Camissonia campestris subsp. campestris</em></td>
<td>Mojave suncup</td>
</tr>
<tr>
<td><strong>Papaveraceae</strong> (Poppy family)</td>
<td></td>
</tr>
<tr>
<td><em>Argemone munita</em></td>
<td>Flatbud pricklypoppy</td>
</tr>
<tr>
<td><em>Eschscholzia californica</em></td>
<td>California poppy</td>
</tr>
<tr>
<td><strong>Polemoniaceae</strong> (Phlox family)</td>
<td></td>
</tr>
<tr>
<td><em>Gilia sp.</em></td>
<td>Gilia</td>
</tr>
<tr>
<td><strong>Polygonaceae</strong> (Buckwheat family)</td>
<td></td>
</tr>
<tr>
<td><em>Eriogonum angulosum</em></td>
<td>Anglestem buckwheat</td>
</tr>
<tr>
<td><em>Eriogonum baileyi</em></td>
<td>Bailey's buckwheat</td>
</tr>
<tr>
<td><em>Eriogonum fasciculatum</em></td>
<td>California buckwheat</td>
</tr>
<tr>
<td><em>Eriogonum roseum</em></td>
<td>Wand buckwheat</td>
</tr>
<tr>
<td><em>Polygonum aviculare</em></td>
<td>Prostrate knotweed</td>
</tr>
<tr>
<td><strong>Salicaceae</strong> (Willow family)</td>
<td></td>
</tr>
<tr>
<td><em>Salix laevigata</em></td>
<td>Red willow</td>
</tr>
<tr>
<td><strong>Solanaceae</strong> (Potato family)</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX C
### PLANT SPECIES OBSERVED WITHIN THE STUDY AREA

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Datura wrightii</em></td>
<td>Sacred thorn-apple</td>
</tr>
<tr>
<td><em>Lycium cooperi</em></td>
<td>Peach thorn</td>
</tr>
<tr>
<td>Tamaricaceae (Tamarix family)</td>
<td></td>
</tr>
<tr>
<td><em>Tamarix ramosissima</em></td>
<td>Saltcedar</td>
</tr>
<tr>
<td><strong>MONOCOTS</strong></td>
<td></td>
</tr>
<tr>
<td>Agavaceae (Century-plant family)</td>
<td></td>
</tr>
<tr>
<td><em>Hesperoyucca whipplei</em></td>
<td>Chaparral yucca</td>
</tr>
<tr>
<td>Poaceae (Grass family)</td>
<td></td>
</tr>
<tr>
<td><em>Avena sp.</em></td>
<td>Oat</td>
</tr>
<tr>
<td><em>Bromus hordeaceus</em></td>
<td>Soft brome</td>
</tr>
<tr>
<td><em>Bromus madritensis subsp. rubens</em></td>
<td>Red brome</td>
</tr>
<tr>
<td><em>Bromus tectorum</em></td>
<td>Cheatgrass</td>
</tr>
<tr>
<td><em>Digitaria sanguinalis</em></td>
<td>Hairy crabgrass</td>
</tr>
<tr>
<td><em>Festuca microstachys</em></td>
<td>Pacific fescue</td>
</tr>
<tr>
<td><em>Festuca myuros</em></td>
<td>Rattail sixweek grass</td>
</tr>
<tr>
<td><em>Hordeum murinum</em></td>
<td>Mouse barley</td>
</tr>
<tr>
<td><em>Schismus arabicus</em></td>
<td>Arabian schismus</td>
</tr>
<tr>
<td><em>Stipa cf. pulchra</em></td>
<td>Purple needlegrass</td>
</tr>
<tr>
<td><em>Stipa speciosa</em></td>
<td>Desert needlegrass</td>
</tr>
</tbody>
</table>

An "**" non-native plant species.
APPENDIX D

WILDLIFE SPECIES OBSERVED WITHIN THE STUDY AREA
## APPENDIX D

### WILDLIFE SPECIES OBSERVED WITHIN THE STUDY AREA

<table>
<thead>
<tr>
<th>Scientific name</th>
<th>Common name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reptiles</strong></td>
<td></td>
</tr>
<tr>
<td><em>Uta stansburiana</em></td>
<td>Common Side-blotched Lizard</td>
</tr>
<tr>
<td><strong>Birds</strong></td>
<td></td>
</tr>
<tr>
<td><em>Falco sparverius</em></td>
<td>American Kestrel</td>
</tr>
<tr>
<td><em>Amphispiza bilineata</em></td>
<td>Black-throated Sparrow</td>
</tr>
<tr>
<td><em>Athene cunicularia</em></td>
<td>Burrowing Owl</td>
</tr>
<tr>
<td><em>Corvus corax</em></td>
<td>Common Raven</td>
</tr>
<tr>
<td><em>Eremophila alpestris</em></td>
<td>Horned Lark</td>
</tr>
<tr>
<td><em>Carpodacus mexicanus</em></td>
<td>House Finch</td>
</tr>
<tr>
<td><em>Passer domesticus</em></td>
<td>House Sparrow</td>
</tr>
<tr>
<td><em>Lanius ludovicianus</em></td>
<td>Loggerhead Shrike</td>
</tr>
<tr>
<td><em>Zenaida macroura</em></td>
<td>Mourning Dove</td>
</tr>
<tr>
<td><em>Buteo jamaicensis</em></td>
<td>Red-Tailed Hawk</td>
</tr>
<tr>
<td><em>Sayornis saya</em></td>
<td>Say’s Phoebe</td>
</tr>
<tr>
<td><em>Cathartes aura</em></td>
<td>Turkey Vulture</td>
</tr>
<tr>
<td><em>Sturnella neglecta</em></td>
<td>Western Meadowlark</td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
</tr>
<tr>
<td><em>Ammospermophilus leucurus</em></td>
<td>Antelope Ground Squirrel</td>
</tr>
<tr>
<td><em>Lepus californicus</em></td>
<td>Black-tailed Jackrabbit</td>
</tr>
<tr>
<td><em>Canis latrans</em></td>
<td>Coyote (Indirect, Scat)</td>
</tr>
</tbody>
</table>
LANCASTER ENERGY CENTER PROJECT

JURISDICTIONAL DETERMINATION

August 2014

Owner
sPower LLC
2 Embarcadero Center, Suite 410
San Francisco, CA 94111
(415) 692-7579

Prepared By
NOREAS
16361 Scientific Way, Irvine, CA 92618
(949) 467-9116
APPENDICES

Appendix A  Photograph Log
1.0 EXECUTIVE SUMMARY

This Jurisdictional Determination (JD) summarizes the findings of: (1) U.S. Army Corps of Engineers (USACE) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA), (2) details the Regional Water Quality Control Board’s (RWQCB) legal authority in accordance with Section 401 of the CWA and as defined within Section 13050(e) (et seq.) of the California Water Code (CWC) via the Porter-Cologne Water Quality Control Act (Porter-Cologne), and (3) specifies the limits of California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1600 (et seq.) of the California Fish and Game Code (CFG Code) for the Lancaster Energy Center Project in Lancaster, California (hereafter referred to as the Project, Figure 1). sPower LLC (sPower) is an independent solar power producer and developer of distributed solar assets for utilities that are both municipally- and investor-owned. sPower is proposing to develop the Project. The intended use of this report is to disclose and evaluate any special aquatic resource areas1 within the Project’s “study area.” For the purposes of this document, the “study area” is defined as the Project’s proposed disturbance footprint and its surrounding localized watersheds (Figure 2). This document presents NOREAS Inc.’s (NOREAS) best effort at estimating special aquatic resource area boundaries using the most up-to-date regulations, written policies, and guidance from the USACE, RWQCB, and CDFW. However, only the USACE, RWQCB, and CDFW can make a final determination of special aquatic resource area boundaries and jurisdiction.

Summary of USACE Jurisdiction Pursuant to Section 404 of the CWA

The USACE regulates discharge of fills to Waters of the United States (WoUS)2 through Section 404 of the CWA. The study area contains no WoUS, including no USACE-defined wetlands.

Summary of RWQCB Jurisdiction Pursuant to Section 401 of the CWA and Porter-Cologne

The RWQCB administers CWA Section 401 via the Water Quality Certification (WQC) Program and Porter-Cologne. There are no CWA Section 401 jurisdiction features within the study area; and the Project is not anticipated to result in a discharge of pollutants to California’s surface, coastal, or ground water resources. Nonetheless, sPower has committed to file a Report of Waste Discharge with the RWQCB and complete a National Pollutant Discharge Elimination System (NPDES) permit application to demonstrate compliance with Porter-Cologne.

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1 For the purposes of this document, special aquatic resource areas are being defined as the potential limits of: USACE jurisdiction pursuant to Section 404 of the CWA, the RWQCB’s legal authority in accordance with Section 401 of the CWA and Porter-Cologne, and CDFW’s jurisdiction pursuant to Section 1600 (et seq.) of the CFG Code.

2 The term WoUS is defined as follows (33 CFR 328.3): (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 which are subject to the ebb and flow of the tide; (2) All interstate waters including interstate wetlands; (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, 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 WoUS, (5) Tributaries of WoUS identified above, (6) The territorial sea, and (7) Wetlands adjacent to waters (other than waters that are themselves wetlands).
Summary of CDFW Jurisdiction Pursuant to Section 1600 (et seq.) of the CFG Code

Pursuant to Section 1600 (et seq.) of the CFG Code, the CDFW regulates substantial diversions, obstructions, or changes to the flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. Total CFG Code Section 1600 (et seq.) jurisdiction within the study area is 8.33-acres.

Accordingly, Project implementation that has the potential to affect special aquatic resource areas identified within this report, and may require discretionary approvals by State agencies.
The Study Area is located on the Del Sur USGS 7.5-minute quadrangle map; San Bernardino Base and Meridian, Township 6 North, Range 13 West, Section 3; and Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 29, 30, 31, and 32; and Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26, and 36.

Center coordinates for the Study Area are: 34.663499, -118.295782.
Figure 2. Site Vicinity
2.0 PROJECT AND PROPERTY DESCRIPTION

The Project is a utility scale Solar Generating Facility (SGF) that will create renewable solar electricity, and have a generating capacity of up to 150 megawatts alternating current (MW-AC). It will be located on approximately 1,191 acres and will employ photovoltaic (PV) modules that convert sunlight directly into electrical energy without use of heat transfer fluid or cooling water. The facility is expected to include communication lines, 34.5 kilovolt (kV) feeders and a 220 kilovolt kV transmission line for interconnecting the electrical output of the Project from the proposed collector substation located at 100th Street West and West Avenue J to Southern California Edison's (SCE) Antelope Substation.

The Project can be found on the Del Sur United States Geological Survey 7.5-Minute Topographic Quadrangle Map within the San Bernardino Base and Meridian – Township 6 North, Range 13 West, Section 5; Township 7 North, Range 13 West, Sections 17, 18, 19, 20, 29, 30, 31, and 32; and Township 7 North, Range 14 West, Sections 13, 14, 23, 24, 25, 26 and 36 (USGS 1986). The elevation of the study area ranges from approximately 2,440 to 2,900 ft. above mean sea level. Dominant land cover types within the study area include ruderal, developed, disturbed, and non-native grasslands. Human disturbances within the study area include: fire arm usage, illegal dumping, on- and off-highway vehicle related traffic, residences, road and shoulder maintenance activities, and operating electrical substation, distribution and transmission facilities.
3.0 JURISDICTIONAL DELINEATION

3.1 Review of USACE Jurisdiction Pursuant to Section 404 of the Clean Water Act

Waters of the United States

The USACE regulates the discharge of dredged and/or fill material into WoUS pursuant to Section 404 of the CWA. The USACE has authority to permit the discharge of dredged or fill material in WoUS pursuant to Section 404 of the CWA and to permit work and the placement of structures in navigable WoUS pursuant to the Rivers and Harbors Act of 1899 (RHA).

Ordinary High Water Mark

In the absence of wetlands, the limits of USACE jurisdiction in non-tidal waters, including intermittent streams, extend to the ordinary high water mark (OHWM). The OHWM is defined as “that line on the shore established by the fluctuation of water and indicated by physical characteristics such as a 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” (33 Code of Federal Regulations [CFR] 328.3[e]). In 2005, the USACE issued a Regulatory Guidance Letter (05-05) and added the following additional indicators of an OHWM: wracking; vegetation matted down, bent, or absent, sediment sorting, leaf litter disturbed or washed away, scour, deposition, multiple observed flow events, bed and banks, water staining, and changes in plant communities (USACE 2005).

USACE-Defined Wetlands

Wetlands are defined at 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 a dominance of vegetation typically adapted for life in saturated soil conditions." The methodology set forth in the USACE Wetland Manual generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area must exhibit at least minimal hydric characteristics (EL 1987, USACE 2008b). Although the manual provides great detail in methods and allows for varying atypical or problematic conditions, a wetland should normally meet each of the following three criteria:

1. More than 50% of the dominant plant species at the site must be typical of wetlands (i.e., rated as facultative or wetter in the National List of Plant Species that Occur in Wetlands [Lichvar 2012]);

2. Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., a gleyed color, or mottles with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions). Such soils, known as “hydric soils,” have characteristics that indicate they were developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season; and

3. Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5% of the growing season during a normal rainfall year (Note:
Jurisdictional Determination

for most of low-lying southern California, 5% of the growing season is equivalent to approximately 18 days).

USACE Terminology

The following definitions are from the Rapanos Guidance Memoranda (USACE 2007b, 2008a):

Adjacent,” as defined in USACE and Environmental Protection Agency (EPA) regulations, means “bordering, contiguous, or neighboring.” Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are ‘adjacent wetlands.’ Wetlands that are not separated from a tributary by upland features, such as a berm or dike, are considered “abutting.”

A “tributary,” as defined in the Rapanos guidance memoranda, means a natural, man-altered, or man-made water body that carries flow directly or indirectly into a Traditional Navigable Water (TNW). For purposes of determining “significant nexus” with a traditional navigable water, a “tributary” is the entire reach of the stream that is of the same order (i.e., from the point of confluence, where two lower order streams meet to form the tributary, downstream to the point where the tributary enters a higher order stream).

A water body is considered to have a “significant nexus” with a TNW if its flow characteristics and functions, in combination with the ecologic and hydrologic functions performed by all wetlands adjacent to such a tributary, affect the chemical, physical, and biological integrity of a downstream TNW. A “TNW” includes all of the “navigable waters of the United States,” defined in 33 CFR § 329 and by numerous decisions of the Federal courts, plus all other waters that are navigable-in-fact.

In the context of CWA jurisdiction post-Rapanos, a water body is “relatively permanent” if its flow is year-round or its flow is continuous at least “seasonally,” (e.g., typically 3 months). Wetlands adjacent to a “relatively permanent” tributary are also jurisdictional if those wetlands directly abut such a tributary (USACE 2007b).

3.2 Review of RWQCB Jurisdiction Pursuant to Section 401 of the Clean Water Act and Porter-Cologne

The RWQCB regulates fills to WoUS under the Section 401 WQC Program, which in most instances, mirrors CWA Section 404 jurisdiction. In the absence of CWA Section 404 jurisdiction over isolated Waters, or Waters of the State (WoS), RWQCB jurisdiction over WoS is extended through Porter-Cologne. WoS are defined at Section 13050(e) of the CWC and include any surface water or groundwater, including saline waters, within the boundaries of the State. Porter-Cologne provides a comprehensive framework to protect water quality in California. It requires that any entity who plans to discharge waste where it might adversely affect WoS must first notify the RWQCB, which may impose requirements to protect water quality.

The Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC) decision created “gaps” relating to isolated waters that are no longer subject to the CWA. In response, the State Water Regional Control Board (SWRCB) issued a 2004 Memorandum (SWRCB 2004), stating that RWQCBs should consider setting a higher regulatory
priority on discharges to “isolated waters” than to similar discharges to federally-protected waters of similar value. The 2004 Memorandum further stated that “dredging, filling, or excavation of “isolated” waters constitutes a discharge of waste to waters of the State, and prospective dischargers are required to submit a Report of Waste Discharge (WDR) to the RWQCB and comply with other requirements of Porter-Cologne. Among the procedures recommended in the Memorandum was that the RWQCB refer to the same regulatory considerations generally applied to the issuance of Section 401 permits when issuing a WDR (SWRCB 2004).

According to the SWRCB, the SWANCC decision did not affect the authority of the state to regulate discharges to isolated, non-navigable waters of the state and had no impact upon the RWQCB’s authority to act under state law (SWRCB 2001). Simply because RWQCBs often opted to regulate discharges in the past through Section 401 in lieu of, or in addition to, issuing WDRs does not preclude RWQCBs from issuing WDRs in the absence of Section 401 certification (SWRCB 2001). The State’s position is that these general WDRs will continue to apply to certain discharges to non-federal waters.

### 3.3 Review of CDFW Jurisdiction Pursuant to Section 1600 (et seq.) of the California Fish and Game Code

Pursuant to Division 2, Chapter 6, Sections 1600-1602 et seq. of the CFGC, CDFW regulates any proposed activity that may substantially modify, divert, obstruct, or any activity that causes changes to the flow or bed, channel, or bank of any river, stream, or lake, which supports fish or wildlife.

According to the California Code of Regulations, a "stream" (including creeks and rivers) is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or have supported riparian vegetation." CDFW's definition of "lake" includes "natural lakes or man-made reservoirs." CDFW jurisdiction within altered or artificial waterways is based upon the value of those waterways to fish and wildlife.

For clarification, the CDFW Legal Advisor has prepared the following opinion (ESD-CDFG 1994):

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated (by CDFW) as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.
4.0 METHODS

4.1 Literature Review

Prior to conducting fieldwork, the following information was reviewed to determine watershed characteristics and the locations and types of aquatic resources that may be present within study area limits:

- Del Sur USGS 7.5-minute quadrangle maps (USGS 1986);
- 2014 color aerial photographs (Bing Maps 2014);
- Google Earth version 5.2.1.1588 (September 2014);
- Natural Resource Conservation Service, Soil Survey Geographic Database (SSURGO) (USDA-NRCS 2014a);
- Natural Resource Conservation Service, Watershed Boundary Dataset (USDA-NRCS 2014b);
- Environmental Protection Agency Enviromapper for Water (EPA 2014);
- Federal Emergency Management Agency (FEMA 1996);
- National Wetlands Inventory (NWI) (USFWS 2014);
- North Los Angeles/Kern County Recycled Water Project Final Program Environmental Impact Report (LACWD 2009);
- United States Army Corps of Engineers, Approved Jurisdictional Delineation Form, Los Angeles District, Sunlight Partners Solar Array Project, SPL-2011-01084-SLP (USACE 2013);
- United States Army Corps of Engineers, Approved Jurisdictional Delineation Form, Los Angeles District, West Antelope Solar Project, SPL-2013-00717-SLP (USACE 2014);
- Biological Technical Report for the Lancaster Solar Generating Facility (NOREAS 2014); and
- University of California precipitation data (CIMIS Weather Station #220) (UC 2014).

4.2 Procedures and Field Data Collection Techniques

Clean Water Act Procedures and Other Data Collection Methods

A routine, on-site, field determination was conducted within the study area for USACE-defined WoUS and wetlands using the methods set forth in the USACE Wetland Delineation Manual (EL 1987) and the Arid West Regional Supplement (USACE 2008b). The study area was surveyed in June and July of 2014 in order to determine the presence/absence and boundaries of potential special aquatic resources (i.e., WoS, WoUS, and wetlands) that were identified in literature review as well as through field observations. Areas that were determined to have an OHWM and suspected of being WoS, WoUS, or wetlands were further analyzed for a dominance of
hydrophytic vegetation, hydric soils, hydrology, and other ecosystem services as described below.

Total jurisdictional limits were delineated for WoUS and WoS based on the presence of a well-defined OHWM and/or wetland boundaries for each feature. Identification and location of the OHWM followed guidance provided in Lichvar and Wakely (2004), Lichvar et al. (2006), and Lichvar and McColley (2008). Potential WoS, USACE-defined wetlands, and WoUS were delineated in the field with a sub-meter Trimble GeoXH Global Positioning System (GPS) receiver. Where accessibility was limited (e.g., impenetrable vegetation and drainages having flowing water), features were delineated on high-resolution aerial photographs and subsequently digitized with Geographic Information Systems (GIS). The surface area of each feature was then calculated with GIS in order to determine total jurisdiction of each feature within the study area.

The evaluation process for USACE-defined wetlands considered vegetation, soils, and hydrological parameters—in that order—of suspected features. Potential wetland and WoUS features were also evaluated using the methods set forth in the USACE and EPA CWA jurisdiction guidance documents following the U.S. Supreme Court’s Decision in Rapanos v. United States and Carabell v. United States (USACE 2007a; USACE 2007b; USACE 2008a). Representative photographs are included in Appendix A.

Vegetation

All plants observed were identified to the taxonomic level sufficient to determine their wetland indicator status based on the National List of Plant Species that occurs in the Arid West Region and the National List of Plant Species that Occur in Wetlands (EL 1987, Lichvar 2012, and Table 1). Plants of uncertain identity were subsequently identified from taxonomic keys (Baldwin et al. 2012). Scientific and common species names were recorded according to Baldwin et al. (2012) and Lichvar (2012).

<table>
<thead>
<tr>
<th>Category</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obligate Wetland (OBL)</td>
<td>Almost always occur in wetlands</td>
</tr>
<tr>
<td>Facultative Wetland (FACW)</td>
<td>Usually occur in wetlands but may occur in non-wetlands,</td>
</tr>
<tr>
<td>Facultative (FAC)</td>
<td>Occur in wetlands or non-wetlands</td>
</tr>
<tr>
<td>Facultative Upland (FACU)</td>
<td>Usually occur in non-wetlands but may occur in wetlands</td>
</tr>
<tr>
<td>Obligate Upland (UPL)</td>
<td>Almost never occur in wetlands</td>
</tr>
<tr>
<td>No Indicator (NI)</td>
<td>Wetland indicator status not assigned. Species is assumed to be upland.</td>
</tr>
</tbody>
</table>

The wetland vegetation criterion was considered to be met if the Dominance Test using the 50/20 rule was satisfied (e.g., any species that contributed to a cumulative total of 50% of the total dominant coverage plus any other species comprising at least 20% coverage) (USACE 2008b). Absolute, rather than relative vegetation cover was used in determining dominant species coverage.
Vegetation Communities

Vegetation communities were determined for each wetland or water conveyance feature within the study area. Evaluations of vegetation communities were primarily limited to regions present within the OHWM and/or bed/bank of features, plus the outer limits of associated riparian vegetation. Vegetation communities were identified according to the percent cover of dominant plant species observed within each community. Vegetation community classifications were based on a visual estimation of characteristic dominant flora within a community following Holland (1986) and/or Sawyer et al. (2009).

Hydrology

Hydrology was evaluated in areas suspected of seasonal inundation and/or saturation to the surface during the growing season, provided that the soil and vegetation parameters were met as defined in the Wetlands Delineation Manual (EL 1987). Recent precipitation data were analyzed to evaluate the frequency and amount of rainfall events within the study area and on surrounding lands (UC 2014). Hydrological information was determined for features by signatures on aerial photographs as well as field analysis of the presence/absence of primary or secondary hydrological indicators (e.g., surface water, saturation, sediment or drift deposits, watermarks, soil cracks, oxidized root channels, and biotic or salt crusts) as listed on the Arid West Wetland Determination Data Form.

Interstate or Foreign Commerce Connection

Areas that were identified as special aquatic resources were further evaluated to determine if they have an Interstate or Foreign Commerce Connection. Areas that met the USACE’s three technical criteria for wetlands and that had an Interstate or Foreign Commerce Connection were determined to be WoUS subject to USACE jurisdiction (USACE 2008b). Areas that were not vegetated, but contained an OHWM and hydrological connection to a TNW were also considered to be subject to USACE jurisdiction due to their Interstate Commerce Connection.

Currently, the following are assumed to have an Interstate or Foreign Commerce Connection (33 CFR 328.3 et seq.):

- Navigable waters;
- Wetlands adjacent to navigable waters;
- Non-navigable tributaries of navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months); and
- Wetlands that directly abut such tributaries.

Additional Porter-Cologne Procedures and Data Collection Techniques

Any potential feature that was deemed not to be within the jurisdiction of the CWA, but had potential jurisdiction as a WoS - pursuant to Porter-Cologne (e.g., isolated surface or ground waters and/or wetlands), was further assessed in the field by utilizing field delineation methods described above; except jurisdiction was not excluded based on a lack of interstate or foreign
commerce connection, a negative significant nexus analysis for non-Relatively Permanent Waters (RPW), or for isolated waters and/or wetlands.

Supplemental CDFW Procedures and Data Collection Methods

Suspected CDFW jurisdictional features were further evaluated in the field for the presence of definable streambeds (i.e., having a bed, bank, and channel) and any associated riparian habitat. Streambeds and suspected riparian habitats were evaluated using the CFG Code Section 1600 et seq. and guidance described in A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607 (ESD-CDFG 1994):

- Natural waterways that have been subsequently modified and which have the potential to contain fish, aquatic insects, and riparian vegetation will be treated like natural waterways.
- Artificial waterways that have acquired the physical attributes of natural stream courses and which have been viewed by the community as natural stream courses, should be treated as natural waterways.
- Artificial waterways without the attributes of natural waterways should generally not be subject to Fish and Game Code provisions.

Total CDFW jurisdiction limits were delineated for each feature within the study area containing a defined bed, bank, and channel. The dimensions (i.e., linear length, width, and area) of each feature were determined based on the top-of-bank limits. If adjacent bank, floodplain, and/or terrace areas were vegetated with riparian species associated with the feature, then the feature plus any associated riparian vegetation was mapped and included as part of CDFW jurisdiction.
5.0 SURVEY RESULTS

The study area includes twelve (12) special aquatic resource areas, consisting of 8.33 acres (Figures 3-1, 3-2, 3-3, 3-4, 3-5, 3-6 and 3-7). Descriptions of each feature and its jurisdiction are presented in Table 2. Appendix A includes representative photographs of special aquatic resource areas to illustrate the range of conditions observed.

5.1 Soils

Twelve (12) soil types occur within the study area (Figure 4):

- Greenfield sandy loam, 2-9% slopes;
- Greenfield sandy loam, 2-9% slopes, eroded;
- Greenfield sandy loam, 9-15% slopes, eroded;
- Hanford coarse sandy loam, 2-9% slopes;
- Hanford coarse sandy loam, 9-15% slopes;
- Ramona coarse sandy loam, 2-5% slopes;
- Ramona coarse sandy loam, 5-9% slopes;
- Ramona coarse sandy loam, 9-15% slopes;
- Sunrise sandy loam;
- Terrace escarpments;
- Vista coarse sandy loam, 15-30% slopes, eroded; and
- Vista coarse sandy loam, 30-50% slopes, eroded.

All of the soil types detected within the study area are classified as hydric soils; except for Terrace escarpments and Vista coarse sandy loam (USDA-NRCS 2014a).

5.2 Hydrology

The study area is located within the Antelope Valley Watershed, a closed basin situated within the Western Mojave Desert (USACE 2013 and 2014). More specifically, the study area is within the following predefined Antelope Valley Watershed Hydrologic Unit Code (HUC): 1809020614 Amargosa Creek Watershed (Figure 5). Rosamond, Buckhorn, and Rogers lakes are the central terminus point for surface waters within the Antelope Valley Watershed. The Antelope valley Watershed is situated within northern Los Angeles County, southern Kern County and western San Bernardino County (USACE 2013). Rosamond and Rogers dry lakes are the lowest elevation points of the watershed, with only slight differences. The three dry lake areas cover a total area of about 76 square miles, with a mean surface elevation of 2,270 ft. above sea level.

Antelope Valley is a semi-arid region, generally ranging in elevation from about 2,300 ft. to 3,500 ft. above sea level within the basin floor. Watershed surface flows are generated by mountain snowpack melting and by storm events. Most surface water flows within the Antelope Valley either infiltrate into the groundwater basin or evaporate. During large storm events they can continue to flow to the central three dry lakes situated on Edwards Air Force Base (i.e., Rosamond dry lake, Buckhorn dry lake, and Rogers dry lake). Surface flows that reach the dry lakes are typically subject to evaporation due to underlying clay soils. Most rainfall occurs within the first few months of the year within this region of California, with annual
average precipitation ranging from 5 inches along the northern boundary to 10 inches along the southern boundary of the Antelope Valley Watershed. Storm water runoff from the valley, and surrounding mountains and hills is typically carried by ephemeral stream courses, with surface runoff divided between Little Rock and Santiago canyons. Most of the major watershed drainages originate in the San Gabriel Mountains at the southwestern edge of the watershed, including Big Rock Creek, Little Rock Creek, Amargosa Creek and Anaverde Creek, as well as Oak Creek from the Tehachapi Mountains. Within the valley floor, runoff is primarily carried by sheet flow. Groundwater levels below the central dry lakes generally range 49 ft. to 66 ft. below the ground surface. The dry lakes are devoid of water, except following large or extended storm events where ponded water is subject to evaporation.

Currently, there are no published commercial uses of the surface waters of any tributaries to Rosamond, Buckhorn and Rogers lakes. Recent 2014 review of aerial photographs does not depict surface water usage of any drainages tributary to the dry lakes. In summary, flows within the vicinity of the study area are directed northeast for approximately 14 miles before draining into the Piute Ponds at the southern edge of Rosamond Dry Lake. The FEMA (2014) flood zone, is depicted on Figure 6. The study area also includes hydrologic features previously identified on the NWI (Figure 7).

The regional climate within the vicinity of the Project consists of moderate dry summer months with relatively cool and wetter winters. Seasonal rainfall occurs predominantly in the winter and spring months (November – April). Precipitation data for the Palmdale Central, California region (CIMIS Weather Station No.220) located approximately 12 miles south east of the Project is detailed below:

- Seasonal precipitation prior to the field surveys measured 0.39 inches (August 2013 – July 2014)
- Average annual precipitation within the region is 7.36 inches (U.S. Climate Data 2014)
- The last significant rainfall event with precipitation in excess of 0.1 inch prior to field delineation was on 22 May 2014 (0.35 inches).

5.3 Determination of USACE Jurisdiction Subject to Section 404 of the CWA

The study area is typical of many other well drained, upland, arid, high desert lands that have been grazed, or otherwise disturbed. None of the 12 features detected within the study area are WoUS. This is because Rosamond, Buckhorn and Rogers lakes, are the terminus for all waters within the Antelope Valley Watershed. These dry lakes are not TNWs, do not have use for surface water recreation or other purposes by foreign or interstate commerce, nor do they have surface water industrial usage by industries. All water conveyance features within the study area are tributaries to the isolated Rosamond, Buckhorn and Rogers Lakes. Therefore, the 12 features located within the study area are non-jurisdictional because they are not tributary to a TNW; they do not have an interstate commerce connection; and are considered isolated pursuant to the SWANCC decision (USACE 2013, Figure 8).
5.4 **Determination of RWQCB Jurisdiction Subject to Section 401 of the CWA**

Since the above referenced 12 features are physically isolated and have no outlets or nexus to navigable waters, intrastate commerce, or the State’s coastal or groundwater resources, they are not subject to CWA Section 401 regulation.

5.5 **Determination of CDFW Jurisdiction Subject to Section 1600 of the CFG CODE**

Within the study area, 12 features have a defined bed, bank, channel and/or provide some ecological functions and values to resident and migrating biological resources. Therefore, these features are subject to CDFW jurisdiction pursuant to Section 1600 (et seq.) of the CFG Code. CFG Code Section 1600 (et seq.) jurisdiction within the study area totals 8.33-acres. Descriptions of each feature are presented in Table 2.
Table 2. Jurisdiction within Study Area

<table>
<thead>
<tr>
<th>Feature ID</th>
<th>Feature Description</th>
<th>USACE CWA 404 (acres)</th>
<th>USACE Defined - Wetland (acres)</th>
<th>RWQCB CWA 401 (acres)</th>
<th>CDFG 1600 et seq. (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature 1</td>
<td>Feature 1 is located near the entrance to a Southern California Edison substation and flows east; adjacent to Avenue J. It is predominately non-vegetated and contains cut banks, sediment deposits, and ranges from 6 to 10 feet in width (Appendix A, photo 1, 2 and 3).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.57</td>
</tr>
<tr>
<td>Feature 2</td>
<td>Feature 2 flows east and passes over 100th Street W; a native surface road without culvert. It too has cut banks, sediment deposits, and is sparsely vegetated. Feature 2 primarily supports Dove Weed (&lt;i&gt;Croton&lt;/i&gt; sp.), Brome (&lt;i&gt;Bromus&lt;/i&gt; sp.), Russian Thistle (&lt;i&gt;Salsola tragus&lt;/i&gt;), Lupine (&lt;i&gt;Lupinus&lt;/i&gt; sp.) and an occasional ragweed (&lt;i&gt;Ambrosia artemisiifolia&lt;/i&gt;) (Appendix A, photo 4, 5, 6 and 7).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.21</td>
</tr>
<tr>
<td>Feature 3</td>
<td>Feature 3 flows northeast and passes underneath 90th Street W; by means of a culvert. It has cut banks, sediment deposits, and is sparsely vegetated. Feature is dominated by Russian thistle and supports other upland vegetation such as Dove Weed, Brome and Black Mustard (&lt;i&gt;Brassica nigra&lt;/i&gt;) (Appendix A, photo 8).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.76</td>
</tr>
<tr>
<td>Feature 4</td>
<td>Feature 4 flows north and has cut banks, sediment deposits, and is sparsely vegetated. It is dominated by Dove Weed, Brome and Russian thistle and ranges from 3 to 5 feet wide (Appendix A, photo 9).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.10</td>
</tr>
<tr>
<td>Feature 5</td>
<td>Feature 5 flows northeast has bed, bank, and sediment deposits; ranges from 4 to 27 feet in width (Appendix A, photos 11 and 12).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.06</td>
</tr>
<tr>
<td>Feature 6</td>
<td>Feature 6 flows north, and is the result of a culvert that directs surface water s beneath the California Aqueduct. It ranges from 3 to 26 feet in width; and has bed, bank, and sediment deposits. Feature is vegetated with upland species, with the exception of roughly 2,000 square feet of scale-broom (&lt;i&gt;Lepidospartum squamatum&lt;/i&gt;) at it southern terminus (Appendix A, photo 13).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.27</td>
</tr>
<tr>
<td>Feature 7</td>
<td>Feature 7 flows north and is the consequence of a culvert that directs surface waters beneath the California Aqueduct as well. It ranges from 4 to 10 feet in width; it has bed, bank, and sediment deposits. Feature 7 supports Dove Weed, California Buckwheat, Brome, and Russian Thistle (Appendix A, photo 14).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.13</td>
</tr>
<tr>
<td>Feature ID</td>
<td>Feature Description</td>
<td>USACE CWA 404 (acres)</td>
<td>USACE Defined - Wetland (acres)</td>
<td>RWQCB CWA 401 (acres)</td>
<td>CDFG 1600 et seq. (acres)</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
<td>-----------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>Feature 8</td>
<td>Feature 8 flows north and is a result of two culverts that direct surface waters beneath the California Aqueduct. It ranges from 7 to 36 feet in width; has bed, bank, and sediment deposits. Feature 8 is vegetated with upland species and dominated by Dove Weed and Russian Thistle. Nonetheless, it supports approximately 3,000 square feet of scale-broom (Appendix A, photo 15 and 16).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.43</td>
</tr>
<tr>
<td>Feature 9</td>
<td>Feature 9 flows east and is the consequence of a culvert that directs surface waters beneath the California Aqueduct. It ranges from 8 to 28 feet in width; it has bed, bank, and sediment deposits. Feature 9 is vegetated with upland species such as White Sage (<em>Salvia apiana</em>); Dove Weed; Brome; California Buckwheat; Russian Thistle; Fiddleneck (<em>Amsinckia</em> sp.); Black Mustard; Lupine; and Jimson Weed (<em>Datura stramonium</em>). (Appendix A, photo 17).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.46</td>
</tr>
<tr>
<td>Feature 10</td>
<td>Feature 10 flows northeast. It ranges from 2 to 24 feet in width and terminates at W Avenue L. It has bed, bank, and sediment deposits. Feature 10 is vegetated with upland species such as White Sage; Dove Weed; Brome; Russian Thistle; Fiddleneck; Black Mustard; Lupine; and Jimson Weed (Appendix A, photos 18, 19 and 20).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.05</td>
</tr>
<tr>
<td>Feature 11</td>
<td>Feature 11 flows northeast. It ranges from 6 to 12 feet in width and the result of two adjacent concrete box culverts that direct surface water beneath the California Aqueduct. Feature 11 has bed, bank, and sediment deposits. It is vegetated with White Sage; Dove Weed; ragweed; Brome; Russian Thistle; Fiddleneck; California Buckwheat; and Jimson Weed (Appendix A, photos 21, 22 and 23).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.56</td>
</tr>
<tr>
<td>Feature 12</td>
<td>Feature 12 flows north and ranges from 4 to 24 feet in width. It is the consequence of two culverts that direct surface water beneath the California Aqueduct and terminates near W Avenue L. Feature 12 has bed, bank, and sediment deposits. It is vegetated with White Sage; Black Mustard; Dove Weed; Brome; Russian Thistle; Fiddleneck; California Buckwheat; and Jimson Weed. Feature 12 also supports inclusions of ragweed and scale-broom (Appendix A, photos 24, 25, 26, 27 and 28).</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.73</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td><strong>8.33</strong></td>
</tr>
</tbody>
</table>
Figure 3-1. Waters of the State Overview

Map Prepared: 7-30-14

Data Source:
- Bing accessed Jul 2014, imagery date range: May 2010 - Oct 2011

C:\SRM\Noreas\Silverado Power\Bayshore\ArcMap\JD\Fig3. Waters Overview.mxd.mxd

Study Area

Note: All Waters within the Study Area are shown in the map Detail Areas.

Photograph Locations

Waters of the State

<table>
<thead>
<tr>
<th>Unique ID</th>
<th>Acres</th>
<th>Average Width (ft)</th>
<th>Approx. Length (ft)</th>
<th>Center Coordinates (Latitude, Longitude)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature 1</td>
<td>0.57</td>
<td>7</td>
<td>3,448</td>
<td>34.689151, -118.296074</td>
</tr>
<tr>
<td>Feature 2</td>
<td>0.21</td>
<td>7</td>
<td>1,221</td>
<td>34.671971, -118.300301</td>
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<tr>
<td>Feature 3</td>
<td>0.76</td>
<td>13</td>
<td>2,608</td>
<td>34.673224, -118.290148</td>
</tr>
<tr>
<td>Feature 4</td>
<td>1.06</td>
<td>15</td>
<td>3,049</td>
<td>34.673224, -118.290148</td>
</tr>
<tr>
<td>Feature 5</td>
<td>0.27</td>
<td>8</td>
<td>1,534</td>
<td>34.675931, -118.313818</td>
</tr>
<tr>
<td>Feature 6</td>
<td>0.13</td>
<td>7</td>
<td>854</td>
<td>34.667921, -118.311088</td>
</tr>
<tr>
<td>Feature 7</td>
<td>1.43</td>
<td>20</td>
<td>3,150</td>
<td>34.665783, -118.304417</td>
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<tr>
<td>Feature 8</td>
<td>0.46</td>
<td>17</td>
<td>1,196</td>
<td>34.662129, -118.295059</td>
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<td>Feature 9</td>
<td>1.05</td>
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<td>3,552</td>
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<td>Feature 10</td>
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<td>10</td>
<td>2,448</td>
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<tr>
<td>Feature 11</td>
<td>1.73</td>
<td>13</td>
<td>6,048</td>
<td>34.650136, -118.285202</td>
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</tbody>
</table>

Total 8.33

Data Source: Bing accessed Jul 2014, imagery date range: May 2010 - Oct 2011

Map Prepared: 7-30-14

Prepared by:

 Regents of the University of California 2014
Figure 3-2. Waters of the State

Location of the Detail Area within the Study Area

Note: All Waters within the Study Area are shown in the map Detail Areas.
Figure 3-3. Waters of the State

Photograph Location, Number and Direction

Study Area

Detail Area (inset)

Matchline

Waters of the State

Note: All Waters within the Study Area are shown in the map Detail Areas.

Location of the Detail Area within the Study Area

Matchline 1

Data Source:
- Bing accessed Jul 2014
- Imagery data range: May 2010 - Oct 2011
- Map Prepared: 7-30-14

Prepared by:
Figure 3-4. Waters of the State

Map Prepared: 7-30-14

Data Source:
- Bing accessed Jul 2014,
  imagery date range: May 2010 - Oct 2011

Study Area

Detail Area (inset)

Matchline

- Waters of the State

Note: All Waters within the Study Area are shown in the map Detail Areas.
Figure 3-5. Waters of the State

Map Prepared: 7-30-14
Data Source:
- Bing accessed Jul 2014, imagery date range: May 2010 - Oct 2011

Location of the Detail Area within the Study Area

Note: All Waters within the Study Area are shown in the map Detail Areas.

Study Area
Detail Area (inset)
Matchline
Waters of the State

Photograph Location, Number and Direction
Culvert with Width

1 inch = 400 feet

Location of the Detail Area within the Study Area

Prepared by:
NOREAS

Figure 3-5. Waters of the State
Figure 3-6. Waters of the State

Map Prepared: 7-30-14

Data Source:
- Bing accessed Jul 2014, imagery date range: May 2010 - Oct 2011

Study Area

Detail Area (inset)

Matchline

Note: All Waters within the Study Area are shown in the map Detail Areas.
Study Area
Detail Area (inset)
Matchline

Note: All Waters within the Study Area are shown in the map Detail Areas.

Figure 3-7. Waters of the State
Figure 4. Soils

Study Area

Soil Types
- Greenfield sandy loam, 2-9% slopes
- Greenfield sandy loam, 2-9% slopes, eroded
- Greenfield sandy loam, 9-15% slopes
- Greenfield sandy loam, 9-15% slopes, eroded
- Hanford coarse sandy loam, 2-9% slopes
- Hanford coarse sandy loam, 9-15% slopes
- Ramona coarse sandy loam, 2-5% slopes
- Ramona coarse sandy loam, 5-9% slopes
- Ramona coarse sandy loam, 9-15% slopes
- Sunrise sandy loam
- Terrace escarpments
- Vista coarse sandy loam, 15-30% slopes, eroded
- Vista coarse sandy loam, 30-50% slopes, eroded

Data Sources:
- Bing accessed Jul 2014, image date range: May 2010 - Oct 2011
- NRCS Web Soil Survey accessed Jul 2014

Map Prepared: 7-1-14

Prepared by:

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Study Area

Data Sources:
- Bing accessed Jul 2014
- USDA-NRCS, USGS, EPA Watershed Boundary Dataset accessed Jun 2014 (Data Date: Dec 2013)

Map Prepared: 7-1-14

Figure 5. Watershed

Water Features

- Study Area
- Aqueduct, River or Tributary
- Water Body
- Amargosa Creek Watershed (HUC10: 1809020614)
- Railroad Canyon Subwatershed (HUC12: 180902061404)

Prepared by:
Figure 6. FEMA Floodplain Zones

- Study Area
- 100-year Flood Zone (1% Annual Chance of Flood)
- Area of Moderate Flood Hazard, Between the Limits of the 100- and 500-year Flood

Data Sources:
- Bing accessed Jul 2014, imagery date range: May 2010 - Oct 2011
- FEMA National Flood Hazard Layer accessed Jun 2014

Map Prepared: 7-1-14
Figure 7. National Wetland Inventory
Figure 8. USACE Jurisdiction within Antelope Valley

Data Sources:
- Bing accessed Jul 2014
- USDA-NRCS, USGS, EPA Watershed Boundary Dataset and National Hydrography Dataset accessed Jan 2014

Map Prepared: 7-1-14

* Based on Approved Jurisdictional Determination SPL-2011-01084-SLP.
6.0 PROPOSED RECOMMENDATIONS AND MEASURES TO OFFSET ADVERSE IMPACTS TO SPECIAL AQUATIC RESOURCE AREAS

The following measures are recommended as a means of avoiding and minimizing adverse impacts to protected aquatic and semi-aquatic resources which have the potential to occur within the study area, and on adjacent lands:

- Prior to undertaking ground-disturbing activities within or immediately adjacent to any special aquatic resource areas detailed herein, sPower should consult with the appropriate responsible agencies to verify the results of this determination and complete any necessary discretionary notifications, permit applications, etc.

- The features characterized within document are not subject to CWA Section 404 and 401 regulation and the proposed actions are not anticipated to result in a discharge of pollutants to California's surface, coastal, or ground water resources. Therefore, Project specific notifications and permit applications are likely limited to CDFW for impacts to special aquatic resource areas and filing a Report of Waste Discharge with the RWQCB, and completing a National Pollutant Discharge Elimination System (NPDES) permit application to demonstrate compliance with Porter-Cologne; and

- Develop an informal plan to offset or compensate for impacts to special aquatic resource areas (i.e., permanent losses).

The services performed and documented in this report have been conducted in a manner consistent with the level of care and skill ordinarily exercised by other professional consultants under similar circumstances. No other representations are either expressed or implied and no warranty or guarantee is included or intended in this report. Opinions relating to presence, absence, or potential for occurrence of biological resources are based on limited data and actual conditions may vary from those encountered at the times and locations where the data were obtained despite due professional care.
Jurisdictional Determination

7.0 REFERENCES


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United States Army Corps of Engineers (USACE). 2014. Approved Jurisdictional Delineation
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Vasilas (eds.). USDA,NRCS, in cooperation with the National Technical Committee for
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States. Vector digital data: CONUS_wet_poly. Division of Habitat and Resource
Conservation, Washington, D.C.
<URL: http://wetlandsfws.er.usgs.gov/NWI/download.html>

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http://map24.epa.gov/EMR/>

U.S. Geographic Survey (USGS). 1986. 7.5 minute quadrangle map of Del Sur, California.
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Direction: West.

Photograph: 2
Feature: 1
Direction: East.
| Photograph: 3 |
| Feature: 1 |
| Direction: West. |

<p>| Photograph: 4 |
| Feature: 2 |
| Direction: Northeast. |</p>
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Feature: 2
Direction: Northeast.

Photograph: 8
Feature: 3
Direction: Southwest.
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Photograph: 12
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Direction: Northeast.
Direction: Northeast.

Direction: North.
| Photograph: 15 |
| Feature: 8 |
| Direction: Northeast. |

| Photograph: 16 |
| Feature: 8 |
| Direction: South. |
Photograph: 17
Feature: 9
Direction: Northeast.

Photograph: 18
Feature: 10
Direction: East.
Direction: North.

Direction: Southwest.
Photograph: 21
Feature: 11
Direction: Southwest.

Photograph: 22
Feature: 11
Direction: Northeast.
Photograph: 23
Feature: 11
Direction: Southwest.

Photograph: 24
Feature: 12
Direction: Southwest.
Photograph: 25
Feature: 12
Direction: Northeast.

Photograph: 26
Feature: 12
Direction: North.
Photograph: 27
Feature: 12
Direction: North.

Photograph: 28
Feature: 12
Direction: South.