Alpine Solar — 35-Acre Project Mitigated Negative Declaration

County Project No. R2009-02089
Conditional Use Permit No. RCUPT201100061
Environmental Review No. RENVT201100093

COUNTY OF LOS ANGELES
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

September 1, 2011

With Technical Support from

CH2MHILL

6 Hutton Centre Drive, Suite 700
Santa Ana, California 92707

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Environmental Checklist Form (Initial Study)

County of Los Angeles, Department of Regional Planning

Project title: Alpine Solar – 35-Acre Project

Project location: Northwest corner of Avenue C and 210th, northwest of Lancaster
APN: 3256-015-007; 3256-015-009 *Thomas Guide*: Pg. H (LA County 62nd Ed.) *USGS Quad*: Neenach School Quadrangle

Gross Acreage: 35 acres

Description of project: To allow for the optimization of the recently approved Alpine Solar Project (ASP) (Los Angeles County Conditional Use Permit Number 200900158, Project Number R2009-02089-(5), March 30, 2011) as a nominal 92 megawatt (MW) photovoltaic generating facility, NRG Solar Alpine LLC proposes to include two additional parcels (35 acres total) located adjacent to a portion of the approved 800-acre ASP, resulting in a total of 835 acres for the ASP and 35-acre site (Combined Project). The two new parcels are proposed to be used for the placement of solar PV modules and related support facilities; however, the Combined Project will continue to consist of a nominal 92 MWs of PV generation.

General plan designation: Non Urban (NU-1)
Community/Area wide Plan designation: Antelope Valley Areawide Plan
Zoning: Heavy Agricultural (A-2)

Surrounding land uses and setting: The Alpine Solar – 35-Acre Project ("Project" or "proposed Project") site is located in a rural area of the Antelope Valley in the northern portion of Los Angeles County. The Project is located within the area considered to be part of the Fairmont rural community. Other nearby rural residential communities are Neenach, located approximately 3 miles from the western boundary of the Project site, and Antelope Acres, located approximately 10 miles from the eastern boundary of the Project site. The closest residence is approximately 7,000 feet from the western boundary. The largest communities in the vicinity of the Project site include Rosamond, approximately18 miles to the northeast, and Lancaster, approximately 20 miles to the southeast. Recreational opportunities in the area include the Los Angeles County Desert Pines Wildlife Sanctuary approximately 4 miles to the south, the Arthur B. Ripley Desert Woodland State Park approximately 3 miles to the south, and the Antelope Valley Poppy Preserve State Park approximately 7 miles to the southeast. Major transportation facilities include State Route (SR) 14 (north-south); SR 138/Avenue D (east-west); and several public, private, and military airports.

The Project is generally located at the northwestern corner of 210th Street West and Avenue C and immediately west of the approved ASP. The Project location is depicted in the Site Plan (see Figure PROJECT-2).

The environmental setting of the Project includes the approved ASP. Construction and operation of the Project will be integrated with the ASP and therefore, the Project incorporates all environmental mitigation commitments included in the certified ASP Mitigated Negative Declaration (SCH 2010111082) and incorporates all conditions of the ASP Conditional Use Permit (CUP) authorization (RCUPT200900158).

Major projects in the area:
California Environmental Quality Act (CEQA) Guidelines (§15130[b][1]) recommend two methodologies for establishing the cumulative impact scenario. This document relies on the approach described in §15130[b][1][A], which uses "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency" (§15130[b][1][A]). Figure CUMULATIVE-1 shows the cumulative projects in relationship to the Project. Appendix A provides a table of the cumulative projects. See Section 19. Mandatory Findings of Significance for the analysis of potential cumulative impacts.

Reviewing Agencies:

Responsible Agencies

- ☐ None
- Regional Water Quality Control Board:
  - ☐ Los Angeles Region
  - ☒ Lahontan Region
- ☐ Coastal Commission
- ☐ Army Corps of Engineers

Special Reviewing Agencies

- ☐ None
- ☐ Santa Monica Mtns. Conservancy
  - ☐ National Parks
  - ☐ National Forest
- ☐ Edwards Air Force Base
- ☐ Resource Conservation District of Santa Monica Mtns. Area

Regional Significance

- ☐ None
- ☐ SCAG Criteria
- ☐ Air Quality
- ☐ Water Resources
- ☐ Santa Monica Mtns. Area

Trustee Agencies

- ☐ None
- ☒ State Fish and Game
- ☒ State Parks

County Reviewing Agencies

- ☐ Subdivision Committee
- ☒ DPW:

Public agency approvals which may be required:

Public Agency	*Approval Required* (E.g., permits, financing approval, or participation agreement.)
_____	
_____	_____

Lead agency name and address:
County of Los Angeles
Department of Regional Planning
320 West Temple Street
Los Angeles, CA 90012

Project sponsor's name and address:
NRG Solar Alpine LLC
5790 Fleet Street, Suite 200
Carlsbad, CA 92008

Contact person and phone number: Anthony Curzi, (213) 974-6461

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

IMPACT ANALYSIS SUMMARY MATRIX		No Impact				
			Less than Significant Impact			
				Less than Significant Impact w/ Project Mitigation		
					Potentially Significant Impact	
Environmental Factor	Pg.					*Potential Concern*
1. Aesthetics	19	☐	☒	☐	☐	
2. Agriculture/Forest	25	☒	☐	☐	☐	
3. Air Quality	33	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: dust control; construction equipment exhaust emissions (including diesel particulate matter).*
4. Biological Resources	41	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: reduction in foraging habitat for avian predators/scavengers (e.g. golden eagle, Swainsons' hawk); wildlife movement/corridors.*
5. Cultural Resources	53	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: inadvertent discovery during excavation/grading activities of buried cultural resources at any depth and of paleontological resources greater than 6 feet below ground surface.*
6. Energy	59	☒	☐	☐	☐	
7. Geology/Soils	61	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: geotechnical hazards due to strong seismic groundshaking; soil erosion and loss of topsoil.*
8. Greenhouse Gas Emissions	73	☐	☒	☐	☐	
9. Hazards/Hazardous Materials	75	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: risk of loss, injury, or death involving fires.*
10. Hydrology/Water Quality	85	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: surface water quality due to erosion and sedimentation; flooding.*
11. Land Use/Planning	113	☒	☐	☐	☐	
12. Mineral Resources	121	☒	☐	☐	☐	
13. Noise	123	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: noise levels during temporary construction.*
14. Population/Housing	131	☐	☒	☐	☐	
15. Public Services	135	☐	☒	☐	☐	
16. Recreation	139	☐	☒	☐	☐	
17. Transportation/Traffic	141	☐	☐	☒	☐	*Mitigation is proposed to reduce potential impacts to less than significant for the following: traffic control for construction traffic and motorists during construction.*
18. Utilities/Services	147	☐	☒	☐	☐	
19. Mandatory Findings of Significance	151	☐	☐	☒	☐	*As discussed above, mitigation is proposed to reduce potential impacts to less than significant for the following: air quality, biological resources, cultural resources, geology/soils, hazards/hazardous materials, hydrology/water quality, noise, and transportation/traffic.*

DETERMINATION: (To be completed by the Lead Department.)
On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Anthony Corgi
Signature

Sep. 1, 2011
Date

Signature

Sep. 1, 2011
Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources the Lead Department cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the Lead Department has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level. (Mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced.)

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA processes, an effect has been adequately analyzed in an earlier EIR or negative declaration. (State CEQA Guidelines § 15063(c)(3)(D).) In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

7) The explanation of each issue should identify: the significance threshold, if any, used to evaluate each question, and; mitigation measures identified, if any, to reduce the impact to less than significance. Sources of thresholds include the County General Plan, other County planning documents, and County ordinances. Some thresholds are unique to geographical locations.

8) Climate Change Impacts: When determining whether a project's impacts are significant, the analysis should consider, when relevant, the effects of future climate change on: 1) worsening hazardous conditions that pose risks to the project's inhabitants and structures (e.g., floods and wildfires), and 2) worsening the project's impacts on the environment (e.g., impacts on special status species and public health).

PROJECT DESCRIPTION

Project Title	Alpine Solar – 35-Acre Project
Lead Agency	County of Los Angeles
Contact Person	Adam Thurtell/Anthony Curzi
Project Location	Northern Los Angeles County, approximately 20 miles northwest of the City of Lancaster
Project Sponsor	NRG Solar Alpine LLC
General Plan Designation	Non Urban (NU-1)
Zoning	Heavy Agriculture (A-2)

NRG Solar Alpine LLC obtained a Conditional Use Permit for the Alpine Solar Project (ASP), CUP Number 200900158, Project Number R2009-02089-(5) from Los Angeles County on March 30, 2011 to construct, own, and operate a renewable energy project providing electricity generated from clean solar technology. The approved ASP consists of a nominal 92-megawatt (MW) alternating current (AC) solar photovoltaic (PV) generating facility. The ASP site includes two distinct areas in northern Los Angeles County, defined for the purpose of this document as the Western Parcel (approximately 600 acres) and the Eastern Parcel (approximately 200 acres) (see Figure PROJECT-1). The ASP will occupy approximately 580 acres of the 800 acres.

To allow for the optimization of the ASP as a PV generating facility, NRG Solar Alpine LLC proposes to include two additional parcels (35 acres total) located adjacent to the Western Parcel of the approved ASP, resulting in a total of 835 acres for the Combined Project (see Figure PROJECT-1). The two additional parcels represent the Alpine Solar – 35-Acres Project site and are proposed to be used for the placement of solar PV modules and related support facilities; however, the Combined Project will continue to consist of a nominal 92 MWs of PV generation.

This environmental document relies on the data and analysis contained in the certified Mitigated Negative Declaration (SCH 2010111082) for the approved ASP, which is hereby incorporated by reference, and augmented with additional data and analyses specific to the Project. The potential environmental impacts are described and analyzed in this Mitigated Negative Declaration for the Project, which is proposed to be incorporated into the approved ASP. Project information for the approved ASP is included for reference.

PROJECT OBJECTIVES

In April 2011, Governor Brown signed SBX1 2, which requires California's investor-owned utilities to provide one-third of the state's electricity supplied from renewable sources. This new legislation increases California's current 20 percent renewable portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020. The RPS has created a competitive market for contracts to sell renewable energy, with success determined based on "least cost, best fit" criteria.

NRG Solar Alpine LLC was formed for the sole purpose of developing, constructing, owning, and operating the Project and selling its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to meet California RPS goals. The overarching objective of the Applicant is to: (1) deploy proven technology to generate renewable solar electricity at a competitive cost with little to no environmental impacts and (2) to deliver the electricity to market as soon as possible.

The Alpine Solar – 35-Acre Project has the following specific objectives:

- Allow for the optimization of the permitted ASP Western Parcel as a PV generating facility by including two additional parcels equaling 35 acres.
- Enable flexibility for PV module siting within the overall ASP Western Parcel. The overall generation capability for the Project will remain at approximately 92 MW of electricity, as previously approved for ASP.
- Deploy a technology that has been commercially proven and that is readily available, efficient, and environmentally friendly.
- Locate the Project in northern Los Angeles County on disturbed land in a rural setting within proximity to the existing electric distribution system.
- Minimize the potential impact to the environment by:
  - Locating the Project on previously disturbed or degraded land.
  - Maximize the use of existing infrastructure (transmission lines, roads, and water sources).
  - Minimize the potential impacts to threatened and endangered species.
  - Reduce the emission of greenhouse gases from the generation of electricity.

PROJECT LOCATION

The Project site is located in a rural area of the Antelope Valley in the northern portion of Los Angeles County (see Figure PROJECT-1). The Project is located within the area considered to be part of the Fairmont rural community. Other nearby rural residential communities are Neenach, located approximately 3 miles from the western boundary of the Project site, and Antelope Acres, located approximately 10 miles from the eastern boundary of the Project site. The closest residence is approximately 7,000 feet from the western boundary of the Project site. The largest communities in the vicinity of the Project site include Rosamond, approximately 18 miles to the northeast, and Lancaster, approximately 20 miles to the southeast. Recreational opportunities in the area include the Los Angeles County Desert Pines Wildlife Sanctuary approximately 4 miles to the south, the Arthur B. Ripley Desert Woodland State Park approximately 3 miles to the south, and the Antelope Valley Poppy Preserve State Park approximately 7 miles to the southeast. Major transportation facilities include SR 14 (north-south); SR 138/Avenue D (east-west); and several public, private, and military airports. Parcel numbers and owners are provided below.

Parcel Number	Owner
3256-015-007	Mahnaz Lee, Trustee of the Mahnaz Lee Trust UDT dated February 19, 2008
3256-015-009	NRG Solar Alpine LLC

The Project will utilize the approved ASP access road to be located on 210th Street West and a portion of West Avenue C, which is currently a one-lane unpaved road.

ENVIRONMENTAL SETTING

The environmental setting of the Project includes the approved ASP. Construction and operation of the Project will be integrated with the ASP and therefore, the Project assumes all environmental mitigation

included in the certified ASP Mitigated Negative Declaration (SCH 2010111082) and incorporates all conditions of the ASP Conditional Use Permit authorization (RCUPT200900158).

The Project site is characterized by disturbed, undeveloped land with varying degrees of previous disturbance. Based upon historic photographs and discussions with a previous agricultural tenant, agricultural activities occurred on the Project site, including active carrot production as recently as 2008. Agricultural activities have ceased and the land has been fallow long enough to be colonized by native and non-native vegetation types. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community; which grades into non-native grassland/ruderal habitat toward the western and northwestern portions of the Project site. The elevation of the Project site is approximately 2,735 feet above mean sea level. The local climate is dry, with rainfall averaging less than 10 inches per year, and there are no natural perennial surface waters in the region. The prevailing wind is in an easterly direction, with a mean speed of 5.5 miles per hour (mph). Ambient temperatures vary from below freezing to the mid 100s degrees Fahrenheit.

As part of the approved ASP, a preliminary geologic and geotechnical investigation was performed to evaluate general subsurface conditions and seismic and other geologic hazards and to provide general recommendations for design and construction of the ASP. The scope of the investigation included the Project site and showed that (1) alluvial sediments underlie the Project site and vicinity, (2) no active faults traverse the site; therefore, site-specific seismic studies will not be required, and (3) the construction of the ASP is feasible from a geologic and geotechnical engineering viewpoint. A topographic survey was also performed to establish the site benchmarks and boundaries and to understand grading and drainage requirements.

In addition, a Phase I Environmental Site Assessment (ESA) was performed as part of the ASP, and included the Project site. The purpose of the ESA was to identify recognized environmental conditions (REC) that may potentially affect the Project and to characterize the nature and general magnitude of impacts associated with any REC. The ESA is included as an appendix to the ASP MND and is incorporated by reference (Avalon Environmental Consultants, 2008 and 2010). According to the ESA findings, small quantities of pesticides and fertilizers may have been applied during prior farming activities. Some of the agricultural pesticides and fertilizers potentially used on the Project site could leave low-level, residual chemical constituents in the soil; however, based on the small quantities, it is unlikely that the soil or ground water on the Project site has been adversely impacted by use of pesticides and fertilizers. It has been determined that no further site assessment, soil mitigation or management strategies are necessary.

A portion of Los Angeles County designated Significant Ecological Area (SEA) #60, Joshua Tree Woodland, is located approximately 1,500 feet to the south of the Project site (see Figure PROJECT-1). SEA #60 supports Joshua tree woodland habitat, which is becoming scarce in the western Antelope Valley. Other common species found in SEA #60 include Mojave yucca, sage, box-thorn and buckwheat. The Project will use the same road system as the ASP. A portion of the Combined Project's access road from SR 138 (i.e. within or adjacent to the existing alignment of 210th Street West) will be located along the eastern border of a portion of SEA #60.

PROJECT RELATED FACILITIES

The Project includes placement of solar PV modules and related facilities within 35 acres of land. However, solar technology requires the use of other related facilities, such as substations, transmission lines, access roads, etc. to deliver the electricity. As such, the Project will utilize and connect to the approved facilities to be constructed as part of the ASP. The major components of the proposed Project are described below.

PV Modules

The PV modules for the proposed Project will be consistent with those selected for the ASP. The PV modules will be either crystalline silicon-based (SunPower) or thin film such as cadmium telluride (First Solar) or amorphous silicon (Sharp). When sunlight strikes a PV module, the energy absorbed is transferred to electrons in the atoms of the semiconductor causing them to escape from their normal positions and become part of the current in an electrical circuit. The PV modules convert the sunlight directly into low-voltage DC electricity that is subsequently transformed to AC electricity through an inverter. The system only operates when the sun is shining during daylight hours. The system operates at peak output when the sunlight is most intense.

Only PV modules that are light enough to be manageable by one person during the construction process will be used. PV module technology continues to evolve but representative PV modules are listed below.

Manufacturer	Peak Output (watts)	Nominal Dimensions (feet)
SunPower	305	3.5 x 5.0
First Solar	80	2.0 x 4.0
Sharp	135	3.0 x 4.5

PV Support Structures

Depending on the selected manufacturer, the modules will be mounted on either single-axis tracking structures or fixed-tilt structures that could be up to 8 feet tall. The modules will be grouped in nominal 1 MW-AC arrays that will face due south to maximize the amount of incident solar radiation absorbed over the year. Single-axis trackers would rotate up to 180 degrees along an east-west axis. Structural support elements will be constructed of corrosion-resistant, galvanized steel members that are attached to circular piers or I-beam posts that will be driven into the prepared base grade of the site.

Inverters and Pad-mounted Transformers

At the center of each nominal 1-MW array is a power conversion station where two inverters take the low-voltage DC power output from the PV modules and convert it to AC power. The adjacent pad-mounted transformer steps the voltage up to 34.5 kV. Transformers will be painted in a non-reflective dark green color. The 34.5-kV outputs from each of the pad-mounted transformers are collected together in combining switchgear located at discrete locations on the Project site. The 34.5-kV output from the combining switchgear will be connected to the ASP substations where it will then be stepped up to 66 kV for export to the grid via the ASP's generation tie-line to the Neenach Substation.

Data Acquisition System

The proposed Project will utilize the ASP integrated data acquisition system connected to sensors to record plant operating data including AC power (kilowatt [kW]), ambient temperature (degrees Celsius), irradiance (watts per square meter), and wind speed (meters per second). The data acquisition system will allow data logging and performance monitoring. The control center will be located offsite (not located on the ASP site or Project site); however, the operations and maintenance (O&M) building (located on the ASP site) will contain equipment to support data acquisition from the proposed Project.

Combiners

Combiner boxes merge wiring from multiple modules into a single high-current DC cable and provide over-current protection.

Balance of Plant Equipment

The inverters, pad-mounted transformers, and the step-up transformers will be elevated above the 100-year floodplain on reinforced concrete mat foundations. Balance of Plant mechanical and electrical equipment is supported at grade elevation on individual reinforced concrete pads.

Access and Internal Roads

The proposed Project will utilize the same road system as that of the ASP. For dust control, any additional roads will be treated with a dust palliative compacted over native soils.

TRANSMISSION FACILITIES

The transmission facilities for the Project are consistent with those discussed in the approved ASP Conditional Use Permit. This section describes the proposed transmission facilities required to interconnect the Project with the internal gathering system of the ASP. The Project transmission facilities include switchyards (including transformers), circuit breakers, disconnect switches, and metering.

Internal Electric Gathering System

The Project will require the installation of a 34.5-kV gathering system to deliver the electricity from the combining switchgear to the ASP substation. The onsite electrical system will be an underground 34.5-kV collector line that will deliver the electricity to the ASP substation.

PV FACILITY CONSTRUCTION

Construction of the proposed Project will be integrated into the construction of the ASP. The additional construction required for the proposed Project is not expected to alter the ASP construction schedule or workforce as stated in the approved CUP for the ASP. Beginning with site preparation and grading through equipment setup and commencement of commercial operation, construction of the Project is expected to last approximately 12 to 18 months. Project construction will consist of three major phases: (1) site preparation, which includes clearing/ grading, (2) PV system installation and testing, and (3) site cleanup/restoration.

PROJECT OPERATION AND MAINTENANCE

Operation of the proposed Project will be integrated into the operation of the ASP and is consistent with the terms outlined in the approved CUP for the ASP. Once placed into service, the Project typically will be operated by 1 to 2 people onsite Monday through Friday, every week, with regular personnel visitations for security, maintenance, and system monitoring. Project maintenance performed onsite will consist of equipment inspection and replacement. Maintenance will occur during daylight hours where possible. However, maintenance activities on the PV modules and DC systems will be performed at night.

Fencing

To ensure the safety of the public and the facility, the Project will be fenced (the fencing will be incorporated into the ASP fenced area) and signs will be posted. Access to the Project will be controlled, and gates will be installed at the roads entering the Combined Project. The fence will be equipped with a perimeter detection system to monitor any intrusion into the property. Other security measures under

consideration include the potential deployment of forward-looking infrared cameras at select locations on the property.

Water Use

As stated in the approved CUP for the ASP, the annual water consumption for facility operations, including periodic PV module washing and domestic (potable) use, is less than 2 acre feet (AF) for the ASP. The proposed Project will not result in an increase in water usage, which is expected to remain at less than 2 AF as stated for the ASP. This water will be pumped from wells located on the ASP site, treated as needed for use onsite, or purchased from a local cleaning contractor and transported by truck to the site. No additional wells will be required for the proposed Project.

Wastewater Generation

The Project will not generate a significant amount of wastewater. The PV panel wash water will be limited to water and pressurized water, consistent with ASP's condition of approval #44 and only contains dust washed off of the panels. This wash water will be allowed to soak into the ground and evaporate as it drips off the PV panels. The septic system permitted for the ASP through the Los Angeles County Department of Public Health will also serve the Project. No domestic wastewater will be produced by the Project; therefore, the ASP permitted septic system will be sufficient for operation of the Combined Project.

Plant Lighting System

The Project lighting system will be the same as that approved for the ASP. The system will be designed to provide the minimum lighting needed to achieve safety and security objectives and will be shielded and oriented to focus lighting on the desired areas, minimizing light spillover. Consistent with the ASP's condition of approval #32, the Project will install lights consistent with the International Dark Sky Association.

Fire Control

The PV modules and ancillary equipment are constructed of fire-retardant material. Additionally, routine weed abatement and landscape maintenance will occur. As such, the Project represents a negligible increase in fire potential. The Project will implement the ASP's approved fire prevention plan.

Solid and Non-hazardous Waste

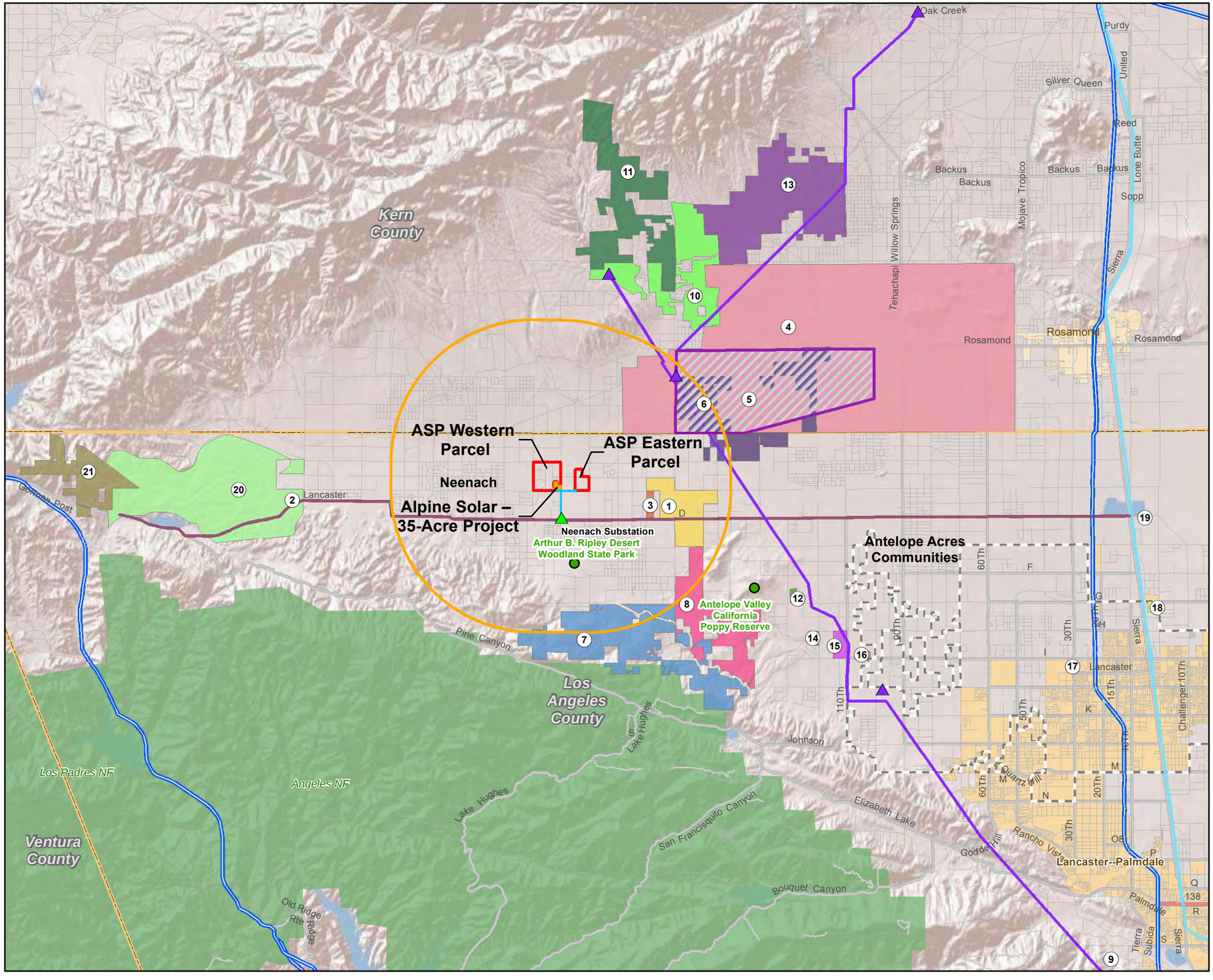
Solid and non-hazardous waste will be managed consistent with the terms outlined in the approved CUP for ASP.

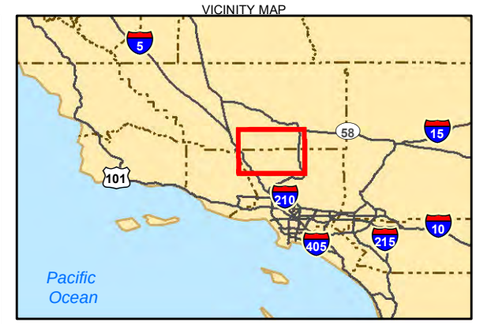
Hazardous Waste

Hazardous waste will be managed consistent with the terms outlined in the approved CUP for ASP.

PLANT CLOSURE

The planned operational life of the facility is 30 years. However, if the facility continues to be economically viable, it could be operated for a longer period. Procedures set forth in a decommissioning plan will be implemented consistent with the terms outlined in the approved CUP for ASP.





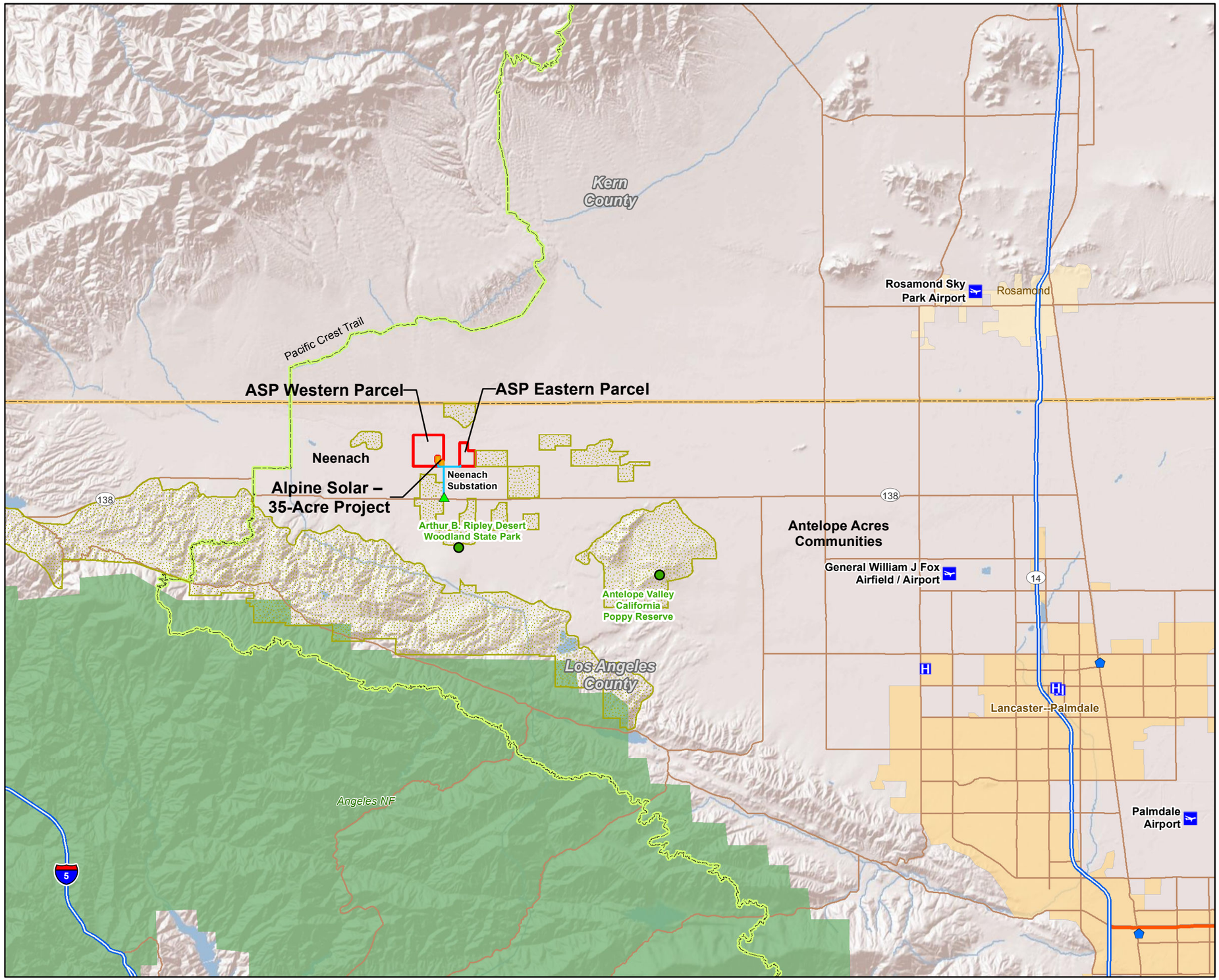
LEGEND

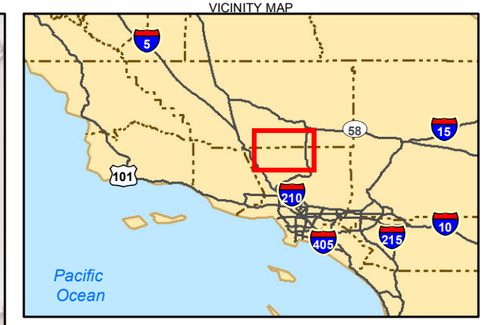
- Existing Substation
- TRTP Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Alpine Solar Project - 5 mile Buffer
- AV Solar Ranch One Solar (1)
- North County Highway Corridor Plan (2)
- Ruby Solar (3)
- Willow Springs Specific Plan (4)
- Antelope Valley Water Bank (5)
- Antelope Valley Solar (6)
- Blue Sky Wind (7)
- Wildflower Green Energy (8)
- Tehachapi Renewable Transmission Project (9)
- Pacific Wind (10)
- Manzana Wind Energy (11)
- Antelope Solar 2 (12)
- Catalina Wind Energy (13)
- Antelope Solar 1 (14)
- Antelope Solar Farm (15)
- 105th Street North 1 (16)
- Lancaster Infill/Redevelopment (17)
- Sierra Demonstation Plant (18)
- CAHST (19)
- Centennial Specific Plan (20)
- Gorman Post Ranch (21)
- California Counties
- National Forests

N

0 3.5
Miles

FIGURE CUMULATIVE-1
Cumulative Projects
Alpine Solar Project





LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Airports
- Hospital
- Sheriff Station
- Pacific Crest Trail
- Major Faults
- Los Angeles County Significant Ecological Ares

N

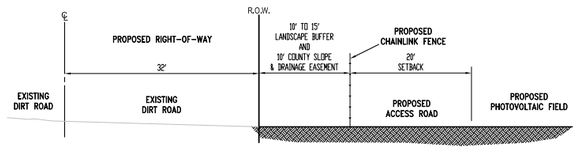
0 3.75
Miles

FIGURE PROJECT-1
Regional Overview
Alpine Solar Project

NRG SOLAR ALPINE LLC.

PHOTOVOLTAIC SOLAR POWER PLANT
LOS ANGELES COUNTY, CALIFORNIA
PROPOSED SOLAR FACILITY

SECTION 7 & PORTIONS OF SECTION 8 OF TOWNSHIP 8 NORTH, RANGE 15 WEST, SAN BERNARDINO BASE MERIDIAN, COUNTY OF OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND



SECTION "A-A"
TYPICAL STREET SECTION
NOT TO SCALE

LEGEND

PROPOSED PHOTOVOLTAIC FEILDS

SITE INFORMATION:

GROSS SITE ACREAGE:	1,534,485 SF/35.23 AC
NET SITE AREA:	1,471,929 SF/33.79 AC
EXISTING ZONING:	A-2-5
PROPOSED ZONING:	A-2-5
EXISTING LAND USE:	AGRICULTURAL
PROPOSED LAND USE:	PHOTOVOLTAIC SOLAR POWER PLANT
THOMAS BRO'S MAP:	F

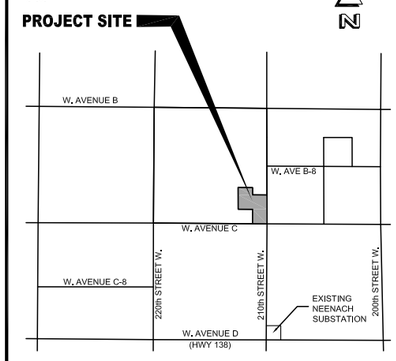
MINIMUM SETBACKS:	REQUIRED	PROVIDED
NORTH	N/A	0'
EAST	N/A	20'
SOUTH	N/A	20'
WEST	N/A	0'

150 0 150 300 450
SCALE: 1"=150'

SITE PREPARATION / EARTHWORK:

SITE PREPARATION WILL CONSIST OF CLEARING, GRUBBING, SCARIFYING AND RECOMPACTING. WITH MINOR GRADING TO REMOVE AND MOUNDS, HOLES OR DITHES THAT HAVE BEEN LEFT AS PART OF THE PREVIOUS AGRICULTURAL USE. THE INTENT IS TO CLEAR AND SMOOTH HE SITE TO A NEAR NATURAL CONDITION. NO SIGNIFICANT EARTH WORK IS PROPOSED.

VICINITY MAP
N.T.S.



JOSEPH E. BONADIMAN & ASSOCIATES INC.
consulting engineers land surveyors
234 N. ARROWHEAD AVE., SAN BERNARDINO, CA 92408-1013
PHONE: (909) 885-3806 - FAX: (909) 381-1721

VERTICAL DATUM

BENCH MARK: L-7035, 50MM(2IN) IP & LACO BM TAG UP 25MM(1IN) 9.4M(31FT) SW/O C/L LANCASTER RD & 0.2K(0.5MI) S/O AVE D 900MM(3FT) SW/O TEL RISER 9.1M(30FT) N/O C/L DIRT RD TO W.

VERTICAL DATUM _____ NAVD 88
ELEVATION _____ 2820.722'

HORIZONTAL DATUM

BASIS OF BEARINGS:
BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE 5, 1983 N.A.D. AS DERIVED FROM STATIC G.P.S. OBSERVATIONS.

ALPINE SOLAR - 35 ACRES
CONCEPTUAL SITE PLAN
TOWNSHIP 8 NORTH, RANGE 15 WEST
LOS ANGELES COUNTY, CALIFORNIA

REVISIONS

NO	DESCRIPTION	BY	APPROVED	DATE

PREPARED FOR: NRG SOLAR ALPINE LLC.

DRAWN BY: J.T.S.	SCALE: 1" = 150'	SHEET: 1 OF 1	C1	
CHECKED BY: J.T.S.	JOB NO: 093543			
DISREGARD PRINTS BEARING EARLIER REVISION DATES →	05-11-11			

Figure PROJECT-2
Site Plan
Alpine Solar Project

Source: Joseph E. Bonadiman & Associates, Inc., 2010.

1. AESTHETICS

Environmental Setting

The Project proposes 35 acres of additional land for placement of solar PV modules and related support facilities. The proposed Project would be constructed and operated as part of the approved ASP and the Project site is located adjacent to the ASP Western Parcel. Therefore, the Visual Technical Report prepared for the ASP, including the locations selected and analyzed as Key Observation Points (KOPs), are applicable to the proposed Project; the Visual Technical Report prepared for the ASP is incorporated by reference (CH2M HILL, 2010).

The Project is located in the Antelope Valley, the westernmost portion of the Mojave Desert, which is characterized by an expansive arid landscape and long-distance views. The Antelope Valley is a triangular-shaped basin with the San Gabriel Mountains to the south and southwest and the Tehachapi Mountains to the north and northwest. The Project site is on the relatively rural western end of the Antelope Valley that consists primarily of rural residences, farmlands, and undeveloped areas. The site is approximately 3 miles east of the rural community of Neenach, which has about 800 residents (Los Angeles County, 2010).

The Project site is currently undeveloped and has varying degrees of disturbance due to previous agricultural activities. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community with both native and non-native vegetation. The proposed Project is located adjacent to the Western Parcel of the ASP and construction and operation of the Project will be integrated with the ASP. The majority of lands immediately adjacent to the ASP are fields that were farmland but have been recolonized by vegetation such as rabbitbrush and non-native invasive species. The exceptions to this are active farmlands adjacent to the northwestern and northeastern corners of the ASP Western Parcel. In addition, a SEA #60, the Joshua Tree Woodland is located approximately 1,500 feet south of the Project site. SEAs are ecologically important systems often integral to the preservation of threatened or endangered species and the conservation of biological diversity in the County. These SEA parcels are densely vegetated and block views from the adjacent roadways.

As part of the ASP, an underground gen-tie line is proposed along 210th Street West between the Project site and the SCE Neenach Substation on SR 138. The existing 210th Street West is a dirt road that passes adjacent to former cropland and a portion of the Joshua Tree Woodland SEA. Other transmission lines exist near the Project, including a wood pole line along the northern side of SR 138.

Recreational facilities in the Project vicinity include regional, state, and national parks and trails such as the Antelope Valley California Poppy Reserve (Poppy Reserve), Arthur B. Ripley Desert Woodland State Park, Los Angeles County Desert Pines Wildlife Sanctuary, and the Pacific Crest National Scenic Trail (PCT). No neighborhood parks are near the Project.

The Poppy Reserve is located on the Antelope Buttes approximately 7 miles southeast of the Project site. The Poppy Reserve is open year round but attracts most visitors from mid-February through mid-May for its wildflower displays. The Poppy Reserve has several miles of trails, an interpretive center, and five designated vista points.

The 560-acre Arthur B. Ripley Desert Woodland State Park is located approximately 3 miles south of the Project site. The Arthur B. Ripley Park offers visitors a self-guided interpretive trail in Joshua tree habitat. In the spring, the park also offers wildflower displays. Los Angeles County Desert Pines Wildlife Sanctuary, approximately 4 miles south of the Project site, is also open to the public but has no established trails.

The PCT is a hiking trail that crosses the Antelope Valley near the Project site. The PCT is a national trail that traverses the west coast of the United States from Canada to Mexico, crossing California, Oregon, and Washington. The PCT descends from the Tehachapi Mountain Range north-northeast of the Project site,

crosses the Antelope Valley, and ascends into the San Gabriel Mountain Range southwest of the Project site. At its closest points, the PCT is approximately 7 miles south, 4.6 miles west, and 4.1 miles north of the Project site.

No State-designated, State-eligible, County-designated, or County-eligible scenic highways have views of the Project area.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Have a substantial adverse effect on a scenic vista, including County-designated scenic resources areas (scenic highways as shown on the Scenic Highway Element, scenic corridors, scenic hillsides, and scenic ridgelines)?	☐	☐	☐	☒

The Project would not impact views from a scenic highway or scenic corridor. The Project is not located within view of a State Scenic Highway. The Project is not located within view of a County scenic highway or corridor, including designated or eligible County Official Scenic Highways or other County scenic corridors, ridgelines, or hillsides (Los Angeles County, 2008).

b) Be visible from or obstruct views from a regional riding or hiking trail?	☐	☐	☒	☐

The Project proposes placement of solar PV modules and related support facilities. The proposed Project would be constructed and operated as part of the ASP. As discussed in the Visual Technical Report prepared for the ASP and incorporated by reference, ASP features would be visible from portions of the PCT a minimum of 4.1 miles north of the Project site. Therefore, Project features also would be visible from this distance. However, the Project features would not have a substantially adverse effect on scenic vistas from these points.

As discussed in the Visual Technical Report, the ASP would be visible from limited portions of the Poppy Reserve, which contains hiking trails. Therefore, Project features also would be visible from this distance. However, the Project would not be substantially visible because of the 7 mile distance and low profile of most Project features.

As discussed in the Visual Technical Report, the ASP would not be visible from trails within the Arthur B. Ripley Desert Woodland State Park because of screening by vegetation. Therefore, Project features would also not be visible from this distance.

The ASP would not be substantially visible from other riding or hiking trails in the Project vicinity. Therefore, Project features would also not be substantially visible.

The Project would not affect the overall visibility from the Poppy Reserve, Arthur B. Ripley Desert Woodland State Park, or other riding or hiking trails in the Project vicinity.

c) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, historic buildings, or undeveloped or undisturbed areas? ☐ ☐ ☒ ☐

The Project is not located in an undeveloped or undisturbed area that contains unique aesthetic features. Project surroundings are typical of the western Antelope Valley. The Project is located in an area that has been primarily used for agriculture. Land use at the Project site includes disturbed, undeveloped land with varying degrees of disturbance due to previous agricultural activities. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community with both native and non-native vegetation. Land adjacent to the Project site is primarily former farmland that is currently undeveloped. Parcels of undisturbed land exist in the Project surroundings that are designated by Los Angeles County as a Joshua Tree Woodland SEA. Portions of the SEA are located approximately 1,500 feet south of the Project site. However, the Project site is completely outside the SEA boundaries.

d) Substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features? ☐ ☐ ☒ ☐

Construction and operation of the proposed Project would be integrated with the ASP. Project features would not be out of character with adjacent uses because of height, bulk, or other features. As discussed in the Visual Technical Report prepared for the ASP and incorporated by reference, solar modules and support structures will be a maximum of 8 feet tall, which is somewhat shorter than existing trees and buildings in the vicinity. Project PV modules and related facilities would the same as the ASP. Other structures required for Project operation (e.g. O&M building, inverter structures, transformers, etc.) would be constructed and operated as part of the Combined Project and were analyzed as part of the approved ASP MND (County of Los Angeles, 2010).

Publicly accessible points from which the Project would be visible, including roadways and trails, are a minimum of 1 mile from the Project site. Although adjacent lands are mostly current or former cropland that contain few structures, the construction and operation of additional PV modules and related support facilities on the Project site would not be discernable from the ASP. In addition, although the Combined Project features have a comparatively large footprint (835 gross acres), from a distance the solar structures have a relatively low profile and are arrayed in rows that mimic the form of row crops in the area. Their height and dark color visually relate to dark stands of trees in adjacent Joshua Tree Woodland SEA parcels.

The proposed Project would be located immediately adjacent to the ASP Western Parcel and therefore, the KOPs selected and analyzed in the Visual Technical Report prepared for the ASP are applicable to the proposed Project (CH2M HILL, 2010). The Project would not substantially degrade the visual character of the site and its surroundings. As is discussed in the Visual Technical Report in the analyses of the ASP's impacts on the KOPs (Section 5.1), the presence of the ASP would somewhat alter the character of the views from publicly accessible areas in the Project vicinity. This is because solar infrastructure is a new feature in a landscape that is primarily farmland and undeveloped land. However, the placement of PV modules and related support facilities as part of the proposed Project would not represent a change in character because the Project would not be readily distinguishable from the ASP and there is a low likelihood that the proposed Project features would be independently identified as solar infrastructure. In addition, the proposed Project would not represent a substantial degradation of the visual character of the site because the Project features are low and do not block views across the valley. Most views of the Project would occur from relatively distant locations because publicly accessible points are a minimum of 1 mile away. In addition, the form of the Project features relates visually to existing agricultural land uses in the

vicinity because rows of solar panels mimic the form of row crops in the area. The geometric and linear forms of the Project footprint and features are the same as those approved as part of the ASP and similar to the geometric and linear forms of existing elements such as roads, parcel boundaries, lines of trees planted as windbreaks, and existing transmission lines.

The Project also would not substantially degrade the existing visual quality of the site and its surroundings. As discussed in the Visual Technical Report prepared for the ASP (Section 5.1), the visual quality in the view from KOPs 1, 4, and 5 would remain substantially the same. From KOPs 2, 3, and 6, the visual quality would be reduced from moderately high to moderate when ASP features are in place. The adverse visual impacts attributed to the ASP do not constitute a substantial or significant change in visual character or quality. The Project would not be readily distinguishable from the ASP and the placement of PV modules and related support facilities would not represent a significant change in visual character or quality.

e) Create a new source of substantial shadows, light, or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Because of the low stature of the PV modules and related support facilities, the Project is not likely to cause sun shadow problems. The Project would not create a substantial new source of glare. Glare is a phenomenon that exists when there is too high a degree of contrast between bright and dark areas in a field of view which makes it difficult for the human eye to adjust to differences in brightness. For example, glare could be created if the filament of an unshielded light were visible at close range in an otherwise dark setting. The Illuminating Engineering Society of North America Outdoor Environment Lighting Committee (IENSA) defines glare as "the sensation produced by luminance in the visual field that is sufficiently greater than the luminance to which the eye has adapted to cause annoyance, discomfort, or loss of visual performance and visibility" (IENSA, 1999 p.46). The IESNA defines three categories of glare:

- Disability glare–the effect of stray light on the eye whereby visibility and visual performance are reduced. A direct glare source that produces discomfort may also produce disability glare by introducing a measurable amount of stray light to the eye.
- Discomfort glare–glare producing discomfort that does not necessarily interfere with visual performance or visibility.
- Nuisance glare–glare that causes complaints.

Photovoltaic collector panels are designed to absorb as much of the sun's energy as possible, and the glass panes that protect the surfaces of the collectors are usually made of a specially formulated glass that permits 90 percent of the light to reach the collectors and reflect only 10 percent of the light that fall on them. As a consequence, solar collector panels are not as reflective as normal glass surfaces. An additional factor to consider in evaluating the effect of any reflectivity of light off the panels is that because the energy of light decreases at a rate that is the square of the distance, the energy of any light reflecting off of the collectors will fall off very rapidly with increasing distance. As is discussed in Visual Technical Report prepared for the ASP (Section 3.2.2), the ASP simulations were rendered to indicate their appearance at times when reflectivity would be the highest. The placement of PV modules and related support facilities as part of the proposed Project would not represent a significant source of light or glare. Construction and operation of the proposed Project would be integrated with the ASP and the discussion and analysis of visual resources presented in the Visual Technical Report prepared for the ASP is applicable to the proposed Project, including the conditions demonstrated in the ASP simulations. Substantial glare would not be experienced at the Poppy Reserve because it is approximately 7 miles away from the Project site. Substantial glare would not be visible from the PCT because the solar modules would be south-facing and their reflective surface

would not be visible from the PCT to the north (see Section 5.1.6 of the Visual Resources Technical Report prepared for the ASP). The Project site is not visible from the PCT to the south and west because views are blocked by intervening topography, vegetation, and structures. Reflectivity would be visible in the Project vicinity (see Sections 5.1.2 to 5.1.5 of the Visual Resources Technical Report prepared for the ASP) and this reflectivity has the potential to create the illusion that the collector field is a lake during times of the day in which the solar panels are reflective. However, because this reflectivity will be angled upward, and because its intensity will be rapidly attenuated by distance, it will not create substantial levels of glare, which properly speaking, refers to levels of brightness that cause discomfort or interfere with vision.

The Project would not create a substantial new source of nighttime light. Because the Project site is in a relatively rural area, any new project has the potential to create a new source of light. However, the light sources associated with the Project would be minimal and consistent with the ASP, would be restricted to that required for nighttime safety and security. As discussed in the Visual Resources Technical Report prepared for the ASP, during the construction phase of the ASP, work would generally occur during daylight hours eliminating the need for substantial night lighting. During the operation phase, lighting would be designed to provide the minimum illumination needed for safety and security and would be shielded to minimize light spillover to surrounding areas.

References

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United States Department of Transportation Federal Highway Administration. 1988. Visual Impact Assessment for Highway Projects.

2. AGRICULTURE / FOREST

Environmental Setting

The Project surroundings are typical of the western Antelope Valley and are characterized by farmland, rural residences, and undeveloped lands. Farmland in the Project area includes designated Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (CDC, 2008) (see Figure AG-1). These designations are described as follows:

Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Unique Farmland: Farmland of lesser-quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.

Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

The Project site includes disturbed, undeveloped land with varying degrees of previous disturbance due to previous agricultural activities. Based upon historic photographs and discussions with a previous agricultural tenant, agricultural activities occurred on the Project site, including active carrot production as recently as 2008. Agricultural activities have ceased and the land has been fallow long enough to be colonized by native and non-native vegetation types. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community; which grades into non-native grassland/ ruderal habitat toward the western and northwestern portions of the Project site. The Project site does not contain Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. Pursuant to the Antelope Valley Areawide General Plan of the Los Angeles County General Plan, the Project site is designated Non Urban (N1) and is an Agricultural Opportunity Area (County of Los Angeles, 1986). Pursuant to Los Angeles County Code 22.24, the Project site is zoned Heavy Agricultural (A-2-5) (see Figure LAND-1) (County of Los Angeles, 2010a).

Most of the lands immediately adjacent to the Project site are former farmland that has been recolonized by vegetation such as rabbitbrush and non-native invasive species. The exceptions to this are (1) farmlands of Local Importance adjacent to 0.25 mile of the northwestern part of the ASP Western Parcel and approximately 0.33 mile of the northern boundary of the ASP Western Parcel; (2) a square mile of Prime Farmland located diagonally across from the northwestern corner of the ASP Western Parcel; and (3) land designated as Joshua Tree Woodland SEA located approximately 1,500 feet south of the Project site.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐

The proposed Project would not convert Prime Farmland to a non-agricultural use. After the 30-year expected life of the Project, the land could be returned to an agricultural use.

The majority of the Project site is designated as grazing land by the California Department of Conservation Farmland Mapping and Monitoring Program (see Figure AG-2). While active grazing activities are not evident on the site, the proposed Project would temporarily impact approximately 29 acres of designated grazing land. After the 30-year expected life of the Project, the land could be returned to grazing land. Therefore, impacts would be less than significant.

b) Conflict with existing zoning for agricultural use, with a designated Agricultural Opportunity Area, or with a Williamson Act contract?	☐	☐	☐	☒

Pursuant to Los Angeles County Code, the proposed Project site is zoned Heavy Agricultural (A-2-5). Electrical power generating plants are permitted in A-2 zones with a conditional use permit. The Project site does not contain Williamson Act contract lands (County of Los Angeles, 2008).
Therefore, no impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code § 12220 (g)) or timberland zoned Timberland Production (as defined in Public Resources Code § 4526)?	☐	☐	☐	☒

The proposed Project would not conflict with existing zoning or cause the rezoning of forest land or timberland, nor would it result in the loss of forest land. Project lands do not consist of forest lands as defined in Public Resources Code Section 12220(g) nor timberland as defined by Government Code Section 51104(g). Project lands also are not zoned as forest land or Timberland Production. Therefore, there would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

Please refer to the discussion in c) above.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

The Project is proposed on 35 acres of land and will be integrated with the ASP, comprising a total of 835 gross acres. No facilities required by the Project would be located outside of the designated sites for the Combined Project. The Project would not result in conversion of Farmland to non-agricultural use, other than as already noted. Therefore, no impact would occur.

References

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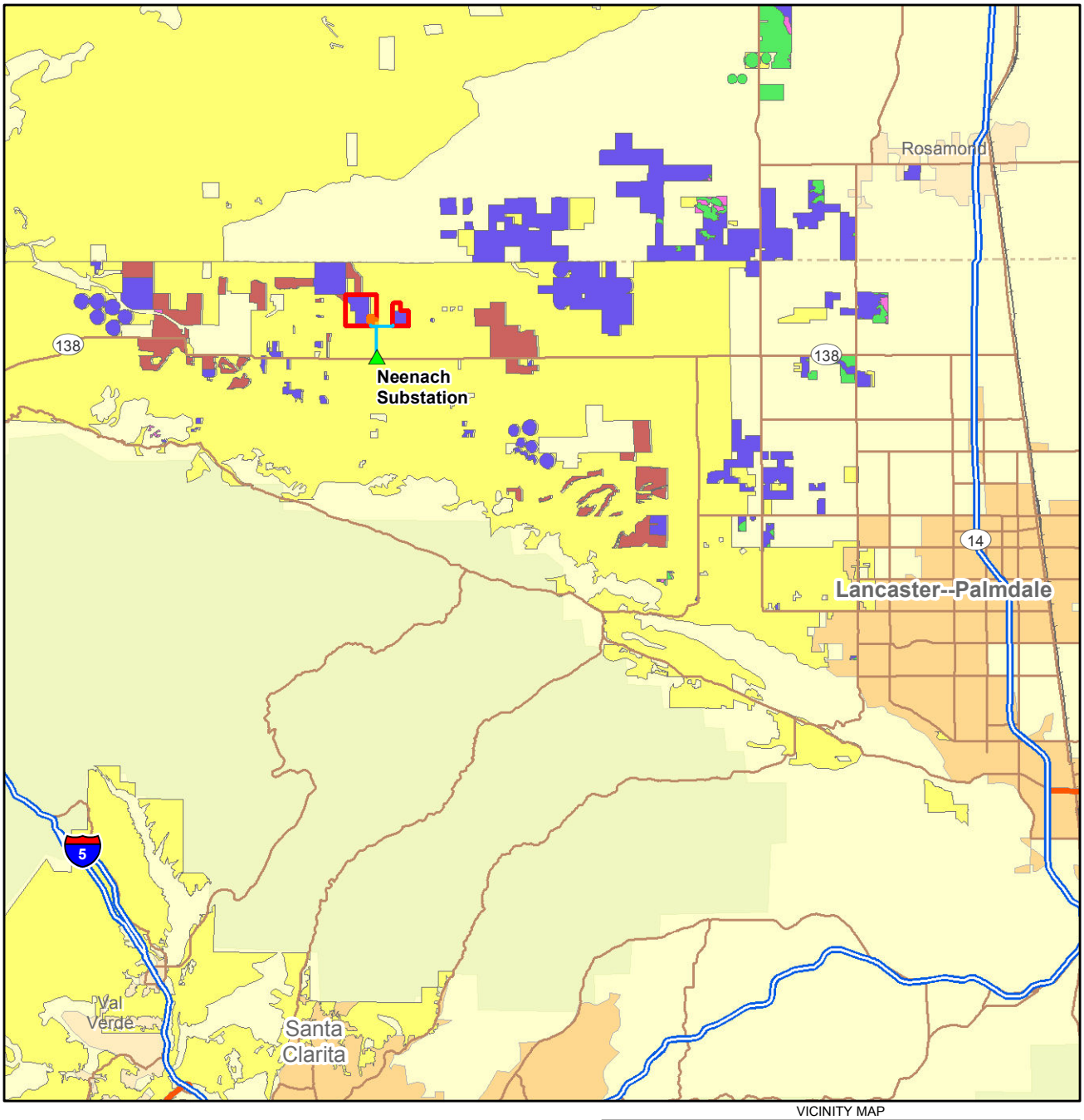


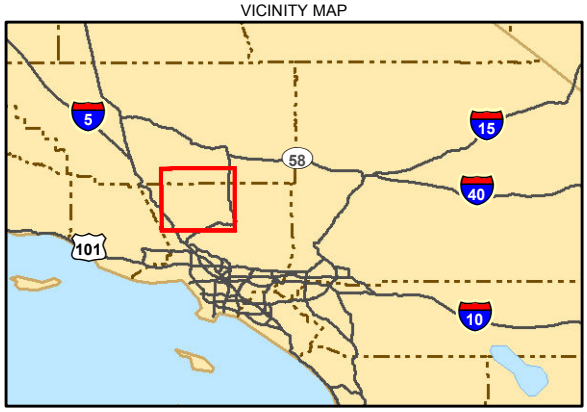
LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project

Farmland Designations

- Farmlands of Statewide Importance
- Prime Farmland
- Unique Farmland
- Farmland of Local Importance
- Grazing Lands

VICINITY MAP

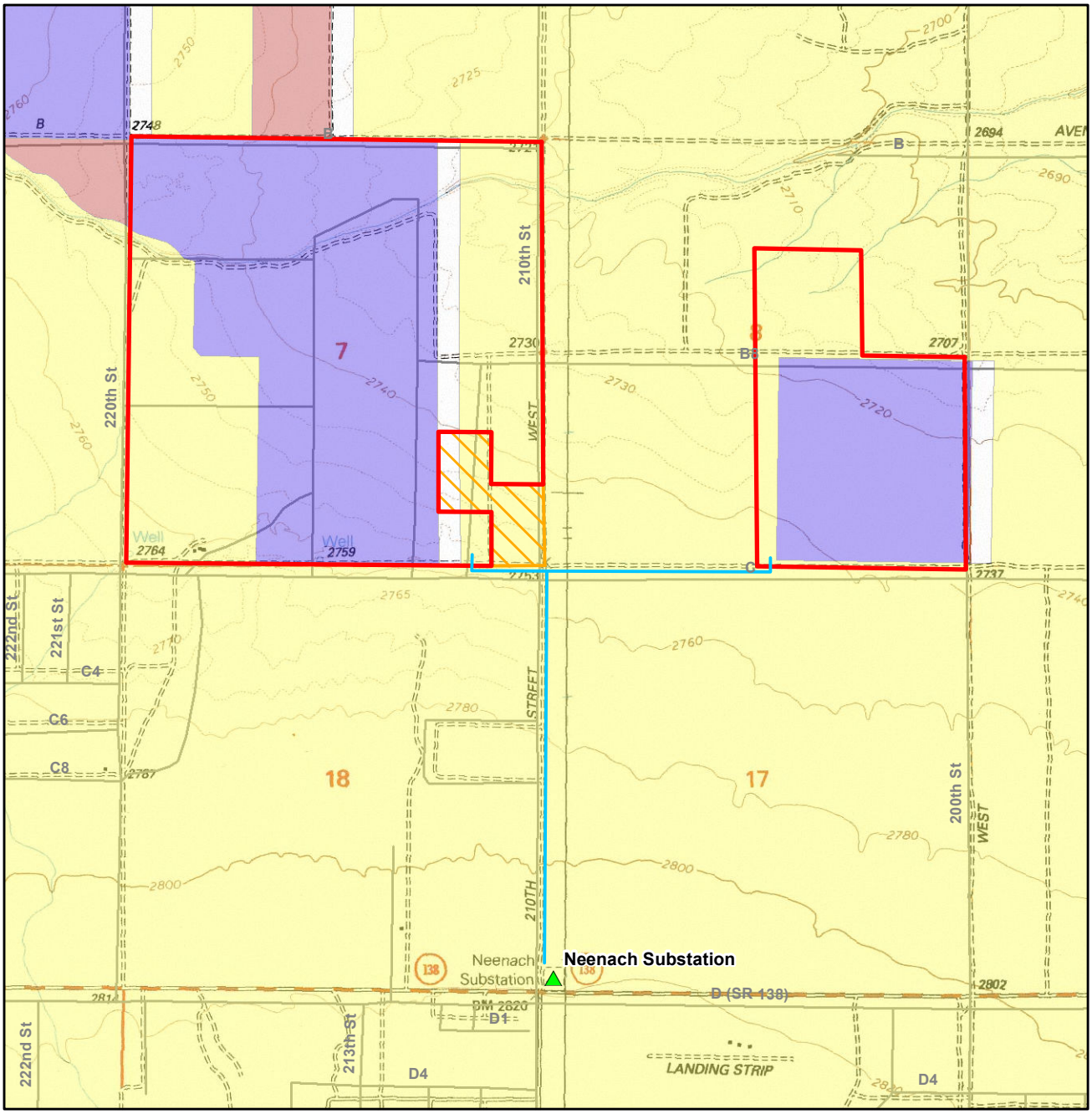


N

0 2.5 5

Miles

FIGURE AG-1
Farmland Mapping – Antelope Valley
Alpine Solar Project



VICINITY MAP

LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project

Farmland Designations

- Farmlands of Statewide Importance
- Prime Farmland
- Unique Farmland
- Farmland of Local Importance
- Grazing Lands

N

0 1,000 2,000

Feet

FIGURE AG-2
Farmland Mapping - Project Site
Alpine Solar Project

3. AIR QUALITY

Environmental Setting

The Project is located in the Mojave Desert Air Basin (MDAB) under the jurisdiction of the AVAQMD. The MDAB covers more than 20,000 square miles and encompasses the majority of California's high desert with typical hot, dry summers and cold winters with little precipitation. It is bounded by the San Gabriel and San Bernardino mountains to the south, which serve as a boundary separating the MDAB from the South Coast Air Basin (SCAB). The Tehachapi Mountains constitute the northwestern boundary separating the MDAB from the San Joaquin Air Basin (SJAB). Because it is a desert environment consisting of flat terrain, high wind conditions can cause the generation of a substantial amount of fugitive dust (i.e., particulate matter). Air quality in the MDAB is also heavily influenced by airborne pollutants transported into the region from the much more heavily populated and industrial areas within the SCAB under the jurisdiction of the South Coast Air Quality Management District.

Criteria Pollutants

The EPA, CARB, and the local air districts classify an area as attainment, unclassified, or non attainment, depending on whether or not the monitored ambient air quality data related to criteria pollutants show compliance, insufficient data available, or non-compliance with the ambient air quality standards, respectively. Criteria pollutants are described below.

Ozone. O_3 is a colorless gas that has a pungent odor and causes eye and lung irritation, reduces visibility, and damages crops. O_3 is a primary constituent of smog and is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving nitrogen oxides (NOx) and reactive organic gases (ROG). Industrial fuel combustion and motor vehicles are the primary sources of NOx and ROG.

Particulate Matter. PM is generally composed of airborne particles, such as dust, soot, aerosols, fumes, and mists. Respirable PM (i.e., PM_{10}) is a primary concern; a subgroup of these particulates is fine particulates (i.e., particles with aerodynamic diameter less than 2.5 microns, or $PM_{2.5}$), which typically have very different characteristics and potential health effects from those of coarse particulates (particles with aerodynamic diameter between 2.5 to 10 microns). Coarse particulates are generated by sources such as windblown dust, agricultural fields, and dust from vehicular traffic on unpaved roads. $PM_{2.5}$ is typically emitted from fuel combustion activities such as operation of industrial and manufacturing process equipment, vehicle exhaust, and residential wood-burning stoves and fireplaces. $PM_{2.5}$ is also formed in the atmosphere when gases such as SO_2, NOx, and VOC emitted by combustion activities are transformed into particles by chemical reactions in the air.

Carbon Monoxide. CO is an odorless, colorless gas that can impair the transport of oxygen in the bloodstream, aggravate cardiovascular disease and cause fatigue, headache, confusion, and dizziness. CO forms through incomplete combustion of fuels in vehicles, wood stoves, industrial operations, and fireplaces. Vehicular exhaust is a major source of CO. CO tends to dissipate rapidly into the atmosphere and consequently is generally a concern at the local level, particularly near major road intersections.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that can irritate the lungs, cause pneumonia, and lower the resistance to respiratory infections. NOx, which includes NO_2, is a key precursor to O_3 and acid rain. NOx forms when fuel is burned at high temperatures, primarily in vehicles and stationary fuel combustion sources such as electric utility and industrial boilers.

Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. High concentrations of SO_2 affect breathing and may aggravate existing respiratory and cardiovascular disease. SO_2 is also a primary contributor to acid deposition, which causes acidification of lakes and streams and can damage trees, crops,

building materials, and statues. In addition, sulfur compounds in the air can contribute to visibility impairment. The major source category for SO_2 is fossil-fuel-burning equipment.

In the AVAQMD, ozone is designated as non-attainment at the state and federal level, and PM_{10} is also in non-attainment under state standards. All other emissions are in attainment or unclassifiable.

Other Pollutants of Concern

Toxic Air Contaminants. Toxic Air Contaminants (TACs) have the potential to cause health effects such as increased risk of contracting cancer. TACs are considered separately from the criteria pollutants in the regulatory process. CAAQSs have not been set for TACs because ambient TAC concentrations vary from area to area and are dependent on the type of emission sources within the region. Therefore, TACs are typically regulated on a source-by-source basis (e.g., type and amount of TACs emitted, proximity to nearest sensitive receptors [hospitals, school, daycare, residences]).

Asbestos. Asbestos is a naturally occurring mineral typically found in ultramafic (i.e., silica poor) rocks that include serpentine. Airborne asbestos fibers may enter the lungs and can cause scarring of lung tissue, leading to asbestosis, and possibly lung or other cancers (e.g., mesothelioma). The California Department of Conservation, Division of Mines and Geology has mapped areas in the state with high probability of containing ultramafic rock; there is no known ultramafic rock in the vicinity of the Project site.

Valley Fever. Valley Fever or coccidioidomycosis is caused by the microscopic fungus coccidioides immitis (*C. immitis*), which grows in arid soil in parts of Los Angeles County, and in other regions in California and around the country. Infection occurs when the spores of the fungus are inhaled. The fungal spores become airborne when contaminated soil is disturbed by construction and agricultural activities, and natural phenomena, such as wind storms, dust storms, and earthquakes. About 60 percent of infected persons have no symptoms. The remainder develop flu-like symptoms that can last for a month and tiredness that can sometimes last for longer than a few weeks. A small percentage of infected persons (<1 percent) can develop disseminated disease that spreads outside the lungs to the brain, bone, and skin. Without proper treatment, Valley Fever can lead to severe pneumonia, meningitis, and even death (http://www.dhpe.org/infect/valley.html).

Air Pollution Sources

The frequent presence of a thermal low pressure area above the Mojave Desert promotes atmospheric transport from the Los Angeles Basin. The most significant large-scale phenomena affecting air quality in the Project area are the transport winds from the northwest and southwest. These winds are responsible for bringing ozone and other pollutants through the mountain passes from the Los Angeles Basin (Cajon and Soledad Passes) and the San Joaquin Valley (Tehachapi Pass). Pollutant transport into the MDAB is the primary reason for the periods of federal and California ozone standard violations (AVSREIR, 2010).

Mobile sources contribute the majority of AVAQMD emissions totals of ROG, NOX and CO. Mineral processes, unpaved roads, and construction/demolition activities contribute the largest fraction to the PM_{10} and $PM_{2.5}$ emissions. There are currently no large-point emission sources in the vicinity of the Project site (AVSREIR, 2010).

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Conflict with or obstruct implementation of applicable air quality plans of the South Coast AQMD (SCAQMD) or the Antelope Valley AQMD?	☐	☐	☐	☒

The main purpose of an air quality plan is to bring an area into compliance with the federal and state ambient air quality standards. Such plans describe air pollution control strategies to be implemented by a city, county, or region. The latest air quality plan, the 2008 Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-Attainment Area), was developed to bring the region into compliance with the federal 8-hour O_3 standard. The Los Angeles County General Plan is consistent with the O_3 attainment plan. Notwithstanding integration of the proposed Project into the ASP, the Project would not require amendments to the Los Angeles County General Plan and would not generate new homes or employment opportunities that would change the County's projections. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan and no impacts would occur.

b) Violate any applicable federal or state air quality standard or contribute substantially to an existing or projected air quality violation (i.e. exceed the State's criteria for regional significance which is generally (a) 500 dwelling units for residential uses or (b) 40 gross acres, 650,000 square feet of floor area or 1,000 employees for nonresidential uses)?	☐	☐	☐	☒

The Project site is 35 acres and therefore will not exceed the 40 gross acre criteria. Construction and operation of the Project will be integrated with ASP, which is 800 gross acres; the Combined Project will comprise a total of 835 gross acres. Therefore, no impacts would occur.

c) Exceed a South Coast AQMD or Antelope Valley AQMD CEQA significance threshold?	☐	☒	☐	☐

The Project site is located in the MDAB and is within the jurisdiction of the AVAQMD. The primary pollutants of concern within the MDAB are O_3 and PM_{10}, because concentrations of these pollutants have been found to exceed ambient air quality standards. The Project is located in an area that is designated as nonattainment, or not in compliance with the air quality standards, for the federal 8-hour O_3 standard, the state 1-hour O_3 standard, the state 8-hour O_3 standard, and the state PM_{10} standards.

Pollutant monitoring results for the years 2007 to 2009 at the MDAB ambient air quality monitoring station (43301 Division Street, Lancaster, CA) indicate that air quality in the Project area has been in compliance with the federal and state ambient air quality standards, except for O_3 concentrations (CARB Website: http://www.arb.ca.gov/aqd/aqdpage.htm). From 2007 to 2009, the measured 1-hour O_3 concentrations exceeded the state standard multiple times. In addition, the measured 8-hour O_3 concentrations also exceeded both the federal and state standards multiple times. PM_{10} concentrations measured at the Lancaster monitoring station did not exceed the federal 24-hour PM_{10} standard, with the exception of one

exceedance in 2007. Measured 24-hour PM_{10} concentrations have exceeded the state standard at least once per year between 2007 and 2009. Measured CO and NO_2 concentrations have not exceeded the federal or state standards during the 3-year period reviewed. SO_2 concentrations are not monitored in the MDAB.

Air pollutant emissions associated with the Project would occur over the short term in association with the integrated construction of the Project and ASP, requiring activities such as grading and vehicle/equipment use. Long-term emissions would result during the integrated operation of the Project and ASP from vehicle trips to and from the site associated with employee trips to work. The discussion below describes potential air quality violations that could occur as a result of the integrated construction and operation of the Project and ASP including construction equipment exhaust emissions, fugitive dust, long-term vehicle emissions, and local CO hot spots.

Construction Equipment Exhaust Emissions. During the construction phase, onsite stationary sources, heavy-duty construction vehicles, construction worker vehicles, and energy use would generate emissions. In addition, fugitive dust would be generated during grading and construction activities. The following significance thresholds for criteria pollutants have been established by the AVAQMD for the integrated construction and operation of the Project and ASP:

- 137 pounds per day for ROG
- 137 pounds per day of NOx
- 82 pounds per day of PM_{10}
- 82 pounds per day of $PM_{2.5}$
- 548 pounds per day of CO
- 137 pounds per day of SOx

Projects in the AVAQMD with construction-related emissions or operation-related emissions that exceed any of the emission thresholds listed are considered to have significant impacts. The Urban Emissions Model (URBEMIS, 2007) computer program, which is the air quality model recommended by AVAQMD for estimating emissions associated with land use development projects, was used to calculate construction emissions (AVAQMD, 2008). The integrated construction period for the Project and ASP is characterized by three separate phases. Phase 1 includes site preparation, clearing, and grading activities. Phase 2 involves underground work, system installation, and testing. Phase 3 includes cleanup and restoration of the construction site. Since AVAQMD's thresholds are expressed in pounds per day, a "worst case" scenario was used to analyze whether any portion of integrated construction activities would exceed the thresholds. Table AIR-1 summarizes the "worst-case" estimated emissions for integrated construction of the Project and ASP. The construction emission's calculation sheet is provided in Appendix B.

TABLE AIR-1
Project Construction Emissions in Pounds per Day

	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**SO_x**
Regional Emissions	19.87	129.17	8.02	7.14	103.63	0.26
AVAQMD Significance Threshold	137	137	82	82	548	137
Exceed?	No	No	No	No	No	No
Source: URBEMIS, 2010.						

As shown in Table AIR-1, peak construction emissions would not exceed the applicable thresholds for ROG, NOx, PM_{10}, $PM_{2.5}$, CO, or SOx. Therefore, impacts related to construction emissions would be less than significant.

Fugitive Dust. Construction dust would affect local air quality at various times during construction of the Project. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed. Clearing, grading, and earthmoving activities have a high potential to generate dust whenever soil moisture is low and particularly when the wind is blowing.

Emissions of particulate matter or visible emissions are regulated by the AVAQMD. Specifically, visible particulate emissions (i.e., dust) are prohibited whenever they are generated in sufficient quantity to fall on offsite properties and cause annoyance to the owner(s) of such property. Construction activities that would generate fugitive dust emissions on the site would be subject to AVAQMD Rule 403. Project construction activities generating fugitive dust would comply with AVAQMD Rule 403 and would not contribute to exceeding the AVAQMD thresholds. The Project would represent a negligible source of fugitive dust emissions, representing only a 0.5 acre increase in the acreage of grading per day (9.5 total acres anticipated to be graded per day for the Combined Project). A summary of the fugitive dust emissions for the Combined Project are presented in Appendix B. Implementation of proposed mitigation measures would reduce construction-related fugitive dust impacts to a less than significant level.

Long-term Emissions. Long-term air emission impacts would be those associated with changes in permanent usage of the Project site. Mobile source emissions would result from vehicle trips associated with the Project. URBEMIS 2007 was used to calculate long-term mobile source emissions during the integrated operation of the Project and ASP. The emissions from daily vehicle trips associated with the Combined Project are illustrated in Table AIR-2. The operational emission's calculation sheet is provided in Appendix B.

TABLE AIR-2
Project Regional Emissions in Pounds per Day

	ROG	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**SO_x**
Regional Emissions	3.93	3.50	5.31	1.03	24.11	0.03
AVAQMD Significance Threshold	137	137	82	82	548	137
Exceed?	No	No	No	No	No	No
Source: URBEMIS, 2010.						

As shown in Table AIR-2, the long-term emissions generated by the Combined Project are not anticipated to exceed the AVAQMD's thresholds; therefore, the proposed Project would have a less than significant impact on local and regional air quality.

d) Otherwise result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? ☐ ☐ ☒ ☐

Construction of the Project would be integrated with ASP and would contribute criteria pollutants in the area; however, the Combined Project's mitigated emissions would be below AVAQMD thresholds, as previously discussed. The operation of the solar PV facility would generate clean renewable energy without reliance on fossil fuels, thereby having a beneficial effect. Cumulative impacts would be less than significant.

e) Expose sensitive receptors (e.g., schools, hospitals, parks) to substantial pollutant concentrations due to location near a freeway or heavy industrial use? ☐ ☐ ☒ ☐

The Project would be integrated with ASP, resulting in a 92-MW solar PV generating facility, which is not a sensitive use. Sensitive receptors are defined as populations that are more susceptible to the effects of pollution than the population at large. Sensitive receptors include long-term health care facilities, convalescent centers, hospitals, residences, playgrounds, rehabilitation centers, retirement homes, schools, child care centers, and athletic facilities. The nearest sensitive receptor is a residence located at the intersection of 192nd Street and West Avenue C, which is approximately 7,000 feet from the Project site. The Project is not near a freeway or heavy industrial use areas. The area around the Project site is predominantly open space, agriculture and scattered low-density residential uses. At this distance, operation of the Project would not expose the sensitive receptor to substantial pollutant concentrations, and the impact would be less than significant.

f) Create objectionable odors affecting a substantial number of people? ☐ ☐ ☐ ☒

Electricity generation via the use of PV systems does not generate chemical emissions that would produce objectionable odors. Potential odor generation would be limited to construction sources such as diesel exhaust and dust. Construction would require the operation of equipment that may generate dust. However, as described above, despite integrated construction of the proposed Project and ASP, activities will not cause any criteria pollutant threshold, including particulate matter, to be exceeded.

In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines (CARB, 2000). High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as having the highest associated risk.

Health risks from TACs are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction-related sources are mobile and transient in nature, and the emissions occur within the Combined Project site. Because of the short duration for construction and the distance to the nearest sensitive receptor, health risks from construction emissions of diesel particulate matter would be a less than significant impact with proposed mitigation.

The Project site is not in proximity to any known sources that create obnoxious odors, dust, and/or hazardous emissions. Land adjacent to the Project site is primarily open space, agriculture and scattered residences. There would be no impact.

Mitigation and Residual Impact

Potential impacts related to air quality would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances and (2) by implementing the following mitigation measures:

AIR-1. Consistent with the requirements of AVAQMD Rule 403, the Project applicant will include dust control measures in construction specifications for the Project and prepare a Dust Control Plan addressing both the proposed Project and ASP. The following measures are required:

- Non-toxic soil binders will be applied per manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions.
- Travel on unpaved roads will be reduced to the extent possible, by limiting the travel of heavy equipment in and out of the unpaved areas.
- The disturbed areas of the active construction sites will be watered at least three times per day (when soil moisture conditions result in dust generation) and more often if visible fugitive dust leaving the site is noted.
- Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer's specifications to exposed piles of soils with a 5 percent or greater silt content.
- Maintain unpaved road vehicle travel to the lowest practical speeds, and no greater than 15 mph, to reduce fugitive dust emissions.
- All vehicle tires will be inspected, be free of dirt, and washed as necessary prior to entering paved public roadways from the Project site.
- Install wheel washers or wash the wheels of trucks and other heavy equipment where vehicles exit the site.
- Cover all trucks hauling soil and other loose material, or require at least 2 feet of freeboard.
- Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures) or otherwise create stabilized surfaces on all unpaved areas through application of dust palliatives at each of the construction sites within 21 days after active construction operations have ceased.
- Prepare contingency for high wind periods (greater than 25 mph) to shut down or mitigate activity as necessary to control fugitive dust.
- Travel routes to each construction site area will be developed to minimize unpaved road travel. Travel management will include staging of deliveries to minimize idling or congestion, use of dust palliatives or soil tackifiers on road surfaces, and minimizing travel distance.

AIR-2. The construction contractor will ensure that all mechanical equipment associated with Project construction is properly tuned and maintained in accordance with the manufacturer's specifications.

AIR-3. Engine idle time will be restricted to no more than 5 minutes as required by the CARB engine idling regulation. Exceptions in the regulation include vehicles that need to idle as part of their operation, such as concrete mixer trucks.

AIR-4. Any off-road stationary and portable gasoline-powered equipment brought onsite for construction activities will have EPA Phase 1/Phase 2 compliant engines, where the specific engine requirement will be based on the new engine standard in effect 2 years prior to the commencement of Project construction. In the event that EPA Phase 1/Phase 2 compliant engines are determined not to be available, the Applicant will provide documentation to the AVAQMD.

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4. BIOLOGICAL RESOURCES

Environmental Setting

The Project site is located in a relatively low population area in the western Antelope Valley, where open land, scattered residences and agriculture are the predominant land uses. The Project site is characterized by disturbed, undeveloped land that has been used previously for agricultural production of carrots. The site has varying degrees of disturbance as evidenced by existing vegetation types (primarily non-native scrub vegetation, including rabbitbrush (*Chrysothamnus* sp.), which have varying heights up to 24 inches. Scattered trash and debris can be found throughout the Project site. The elevation of the Project site is approximately 2,735 feet above mean sea level. The local climate is dry, with rainfall averaging less than 10 inches per year, and there are no natural perennial surface waters in the region. The prevailing wind is in an easterly direction, with a mean speed of 5.5 miles per hour (mph). Ambient temperatures vary from below freezing to the mid 100s degrees Fahrenheit. The Project is located within the Mojave Desert geographical region (Sawyer and Keeler-Wolf, 1995).

A portion of Los Angeles County designated Significant Ecological Area (SEA) #60, Joshua Tree Woodland, is located approximately 1,500 feet to the south of the Project site (see Figure PROJECT-1). SEA #60 supports Joshua tree woodland habitat, which is becoming scarce in the western Antelope Valley. Other common species found in SEA #60 include Mojave yucca, sage, box-thorn and buckwheat.

Previous Survey Efforts

The ASP has been the subject of several biological surveys for both wildlife and plant special-status species. Protocol rare plant surveys were conducted in May 2010 for the ASP, including a 250-foot buffer, and no special-status plants were found. Protocol burrowing owl surveys were conducted of the ASP and a 150 meter buffer in May 2010 and yielded positive results. To address potential impacts to burrowing owl, Bloom Biological Incorporated developed a burrowing owl management plan ("Management Plan") that received concurrence from the California Department of Fish and Game (CDFG) in March 2011. The results of previous survey efforts, as well as the Management Plan to address burrowing owl impacts, are presented in Alpine Solar Project- 35 Acres Biological Resources Technical Report (Appendix C).

The rare plant and burrowing owl surveys of the ASP, including the required buffer areas, covered all but 7.5 acres of the 35-acre Project site. Additional protocol surveys occurred in 2011 to address this area, the results of which are summarized below.

Overview of Methodology

As part of the ASP, both the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) were contacted for a list of threatened, endangered, and other special-status species potentially present in the area. The USFWS indicated that based on a records review and the ASP location, the site was not believed to support any listed, proposed, or candidate species for which USFWS is responsible. The USFWS online species list for Los Angeles County was reviewed for federally listed, candidate, and proposed species that potentially occur on or near the Project site (USFWS, 2010). The species list for eastern Kern County (USFWS, 2010) was also reviewed, as the Project is located near the Los Angeles County-Kern County border. The CDFG recommended a search of the California Natural Diversity Database (CNDDB). The CNDDB was consulted for documented occurrences of special-status species within the ASP site in 2010. An updated CNDDB query was also run for the Project site and a 10-mile radius (CNDDB, 2011). A search of the California Native Plant Society (CNPS) online inventory was conducted to identify additional special-status plant species with the potential to occur on the Project site (CNPS, 2011). The list of species with potential to occur in the Project area, as identified during the 2010 and 2011 information reviews, is presented in Appendix C.

Field Investigation

As noted above, approximately 7.5 acres of the Project site had not been previously surveyed in 2010 as part of the ASP. Consequently, the following surveys were conducted in 2011 to capture this 7.5-acre area and to verify that sensitive wildlife species had not moved onto the ASP since 2010 surveys were conducted:

- Vegetation and rare plant survey of 7.5 acres of Project site not previously surveyed (April 26, 2011)
- Phase II burrowing owl protocol surveys for the Project site and 150-meter buffer area (April 18, 2011 and May 18, 2011)
- Special-status species assessment (general reconnaissance for plant and wildlife) for the Project site and ASP (Western Parcel) on April 18, 2011, April 26, 2011, and May 18, 2011.

The Project site is characterized by disturbed, undeveloped land with varying degrees of previous disturbance. Based upon historic photographs and discussions with a previous agricultural tenant, agricultural activities occurred on the Project site, including active carrot production as recently as 2008. Agricultural activities have ceased and the land has been fallow long enough to be colonized by native and non-native vegetation types. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community; which grades into non-native grassland/ruderal habitat toward the western and northwestern portions of the Project site.

Natural Habitat Communities/Critical Habitat

There are no sensitive natural communities within the site boundary. However, based on the 2011 CNDDB query, eight sensitive natural communities are located within 10 miles of the Project: southern riparian scrub, Valley needlegrass grassland, wildflower field, southern cottonwood willow riparian forest, Valley oak woodland, southern riparian forest, southern willow scrub, and southern sycamore alder riparian woodland. The nearest of these communities, southern riparian scrub, is located approximately 3.3 miles southwest of the Project site (see Figure BIOTA-2).

The Project site does not contain riparian habitat. The Project site does not fall within any critical habitat designation. The nearest critical habitat designation, for the California condor, is located approximately 8 miles north of the Project site.

Plants

The 2011 CNDDB query had no records of rare plants within the Project site boundary. The Project site provides suitable or marginal habitat for 4 of the 20 special-status plant species documented within the 10 mile CNDDB search area: Darwin rock-cress (*Arabis pulchra* var. *munciensis*), Braunton's milk-vetch (*Astragalus brauntonii*), Clokey's cryptantha (*Cryptantha clokeyi*), and short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) (see Figure BIOTA-2).

As a follow-up to previous surveys of the ASP, reconnaissance-level vegetation assessments were conducted on the Western Parcel of the ASP on April 18, 2011, April 26, 2011 and May 18, 2011. The vegetation and rare plant survey was conducted within a 7.5-acre survey area on April 26, 2011. This survey area represents areas not previously surveyed for rare plants as part of the ASP. During the survey, vegetation communities were identified and characterized by species and photographs of the site were taken. The survey methods were consistent with the floristic survey methods described by CDFG and USFWS (Cypher, 2002). A comprehensive list of plants identified during the survey is provided in an appendix to the Alpine Solar Project – 35-Acres Biological Resources Technical Report (Appendix C). A total of 34 plant species were observed at the Project site; of these 23 are native species and 11 are non-native species. No special-status plants were observed during the survey.

The most abundant plant community on the Project site is rabbitbrush scrub (Sawyer et al. 2009, Holland 1986), dominated by rubber rabbitbrush (*Ericameria nauseosus*) and scattered goldenbush

(*Ericameria linearifolia*). Rabbitbrush scrub is a plant community that results from prior land use disturbance and contains both native and non-native habitat elements. Rabbitbrush scrub grades into non-native grassland/ruderal habitat with varying degrees of disturbance toward the western and northwestern portions of the Project site. The Project site contains one Joshua tree (*Yucca brevifolia*) on the southeastern corner, adjacent to 210th Street West.

Wildlife

The 2011 CNDDB query had no records of special-status species within the Project site boundary. Of the 17 special-status wildlife species documented within the 10-mile CNDDB search area or known to occur within the Project vicinity, 5 have the potential to occur on the Project site: burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), coast horned lizard (*Phrynosoma coronatum blainvillii*), Le Conte's thrasher (*Toxostoma lecontei*), and loggerhead shrike (*Lanius ludovicianus*) (see Figure BIOTA-2).

A general reconnaissance-level survey and special-status species assessment was conducted for the Project site on April 26, 2011, May 18, 2011and May 18, 2011. During the surveys, special-status wildlife species were identified and mapped, if observed. A comprehensive list of wildlife species observed during the surveys is provided in an appendix to the Alpine Solar Project – 35-Acres Biological Resources Technical Report (Appendix C). Two of the 10 wildlife species observed onsite during the 2011 surveys are special status species: loggerhead shrike and California horned lark. The loggerhead shrike is a California Species of Special Concern. The California horned lark is on the California Watch List. The loggerhead shrike and California horned lark receive the same level of protection as any other species under the Migratory Bird Treaty Act. They do not require special treatment under CDFG requirements. Although previously observed on the ASP, no burrowing owl or evidence thereof (prey remains, pellets, whitewash, or feathers) was noted and it was determined that the Project site does not contain suitable burrowing owl habitat.

The Project site provides suitable to marginal foraging habitat for the following five special-status bird species: golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*) (wintering), Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), and tri-colored blackbird (*Agelaius tricolor*); none of these species are expected to nest onsite. Golden eagle has been observed perched in the area. California condor (*Gymnogyps californianus*), a federal and state endangered species, may move through the area during seasonal movements. This species is thought to travel northward into Kern and Tulare Counties during the non-breeding season, then return to the Tehachapi Mountains and farther south during the winter.

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) 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 (DFG) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐

No special-status plant species were found on the Project site. Two special-status wildlife species were observed on the Project site: loggerhead shrike and California horned lark. These species receive the same level of protection as any other species under the Migratory Bird Treaty Act. They do not require special treatment under CDFG requirements.

The Project site provides suitable to marginal foraging habitat for the following five special-status bird species: golden eagle (Aquila chrysaetos), ferruginous hawk (Buteo regalis) (wintering), Swainson's hawk (Buteo swainsoni), prairie falcon (Falco mexicanus), and tri-colored blackbird (Agelaius tricolor); none of these species are expected to nest onsite. Golden eagle has been observed perched in the area. California condor (Gymnogyps californianus), a federal and state endangered species, may move through the area during seasonal movements. This species is thought to travel northward into Kern and Tulare Counties during the non-breeding season, then return to the Tehachapi Mountains and farther south during the winter.

Phase II protocol surveys were conducted on April 18, 2011 and May 18, 2011 for the detection of burrowing owls, burrowing owl habitat, and/or suitable burrowing owl burrows. There were six fossorial burrows noted that could potentially be utilized by burrowing owl; however, there was no evidence (prey remains, pellets, whitewash, or feathers) that indicated past or current use by burrowing owl. The Project site does not contain suitable burrowing owl habitat.

Many species of wildlife that may use the Project site would not be affected by Project development; the site is previously disturbed from agricultural uses and existing habitat provides limited wildlife value, except to some edge-adapted species. The solar modules would be raised above the ground and would potentially accommodate wildlife movement or migration of edge-adapted species that may use the site and its vicinity. The solar modules may also provide thermal cover for some ground-dwelling species. However, avian predators/ scavengers (e.g., golden eagle, Swainsons' hawk), if present, would experience a small reduction in foraging habitat.. With incorporation of mitigation measures described below, impacts to sensitive species would be less than significant.

b) Have a substantial adverse effect on sensitive natural communities (e.g., riparian habitat, coastal sage scrub, oak woodlands, non-jurisdictional wetlands) identified in local or regional plans, policies, and regulations DFG or USFWS? These communities include Significant Ecological Areas (SEAs) identified in the General Plan, SEA Buffer Areas, and Sensitive Environmental Resource Areas (SERAs) identified in the Coastal Zone Plan.	☐	☐	☐	☒

The Project would be located on disturbed, undeveloped land with varying degrees of previous disturbance. Rare plant surveys in 2011 indicate that the Project site is predominantly vegetated with rabbitbrush scrub and non-native grassland. Rabbitbrush scrub is a plant community that results from prior land use disturbance and contains both native and non-native habitat elements. Non-native grassland consists of annual grasses. No riparian species or other sensitive habitat is present on the Project site. No wetland indicators (hydrology, hydric soils, hydric vegetation) were documented within the Project site; therefore, no impacts to wetlands are expected. The nearest sensitive natural community is located 3.3 miles from the Project site and potential Project impacts to habitat would be limited to the Project site. As shown on Figure BIOTA-1, the Project site is not located within an SEA, SEA Buffer, or coastal Sensitive Resource (ESHA). Therefore, there would be no impact to sensitive habitat.

c) Have a substantial adverse effect on federally protected wetlands (including marshes, vernal pools, and coastal wetlands) or waters of the United States, as defined by § 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means?

☐ ☐ ☐ ☒

The Project site does not contain a drainage course or channel. No wetland indicators (hydrology, hydric soils, hydric vegetation) were documented within the Project site; therefore, no impacts to wetlands or waters of the United States are expected.

d) 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 anticipated to substantially interfere with the movement of wildlife species. The solar modules would be raised above the ground and would potentially accommodate wildlife movement or migration. The site is previously disturbed from agricultural uses and existing habitat provides limited value to wildlife to use for migratory pathways. With the incorporation of proposed mitigation measures, impacts would be less than significant.

e) Convert oak woodlands (as defined by the state, oak woodlands are oak stands with greater than 10% canopy cover with oaks at least 5" inch in diameter measured at 4.5 feet above mean natural grade) or otherwise contain oak or other unique native trees (junipers, Joshuas, etc.)?

☐ ☐ ☒ ☐

The Project site does not contain any oak trees. The site does contain one Joshua tree on the southeastern corner adjacent to 210th Street West. Joshua tree woodland is considered sensitive by resource agencies because of its scarcity and support of a number of state and federally listed endangered, threatened, and rare vascular plants, as well as several sensitive bird and reptile species (PCR Services Corporation, 2006). However, individual Joshua trees are not considered a special status species and no permit is required by Los Angeles County for their removal. The Joshua tree is located outside the fence line of the solar facility and best management practices will be implemented during construction to avoid impacts to the tree. Impacts to Joshua trees would be less than significant.

f) Conflict with any local policies or ordinances protecting biological resources, including Wildflower Reserve Areas (L.A. County Code, Title 12, Ch. 12.36) and the Los Angeles County Oak Tree Ordinance (L.A. County Code, Title 22, Ch. 22.56, Part 16)?

☐ ☐ ☐ ☒

The Antelope Valley Areawide General Plan is the relevant local policy document affecting development on the Project site. This document does not contain any specific policies with which the Project would conflict. Therefore, there would be no impact.

g) Conflict with the provisions of an adopted state, regional, or local habitat conservation plan? ☐ ☐ ☐ ☒

The Project site and vicinity are located within the Plan Area of the West Mojave Plan Final Environmental Impact Statement (EIS)/EIR (Bureau of Land Management [BLM], 2005), which includes a proposed Habitat Conservation Plan (HCP) for 49 species. A Record of Decision was issued for the EIS/EIR in 2006 (BLM, 2006). However, the HCP has not been finalized, and Los Angeles County has not applied for incidental take permits for the species addressed in the plan, which includes burrowing owl and coast horned lizard. Los Angeles County is a participant in the HCP and approves land use applications that would be in compliance with the requirements of the proposed HCP if the HCP were in effect, and with California Desert Conservation Area (CDCA) Plan of 1980, as amended (BLM, 1999). Both the West Mojave Plan and the CDCA Plan allow for the development of energy facilities, provided that sensitive resources are avoided wherever possible. The Project would be located on disturbed land with limited habitat value. Two special-status species (California horned lark and loggerhead shrike) were observed onsite (protected under the Migratory Bird Treaty Act with no additional protection requirements). No other important biological resources observed on the site. Therefore, the Project would not conflict with either the West Mojave Plan or the CDCA Plan; therefore, there would be no impact.

Mitigation and Residual Impact

Potential impacts related to biological resources would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances and (2) by implementing the following mitigation measures:

BIO-1. Pre-construction surveys will be conducted for nesting birds. If necessary, construction plans will be developed to avoid nesting periods.

BIO-2. Pre-construction clearance surveys will be conducted for ground-dwelling special-status species, including coast horned lizard, to ensure that these species are excluded from the impact zone during construction.

Based on implementation of the above mitigation measures, the potential impacts associated with biological resources would be reduced to a less than significant level.

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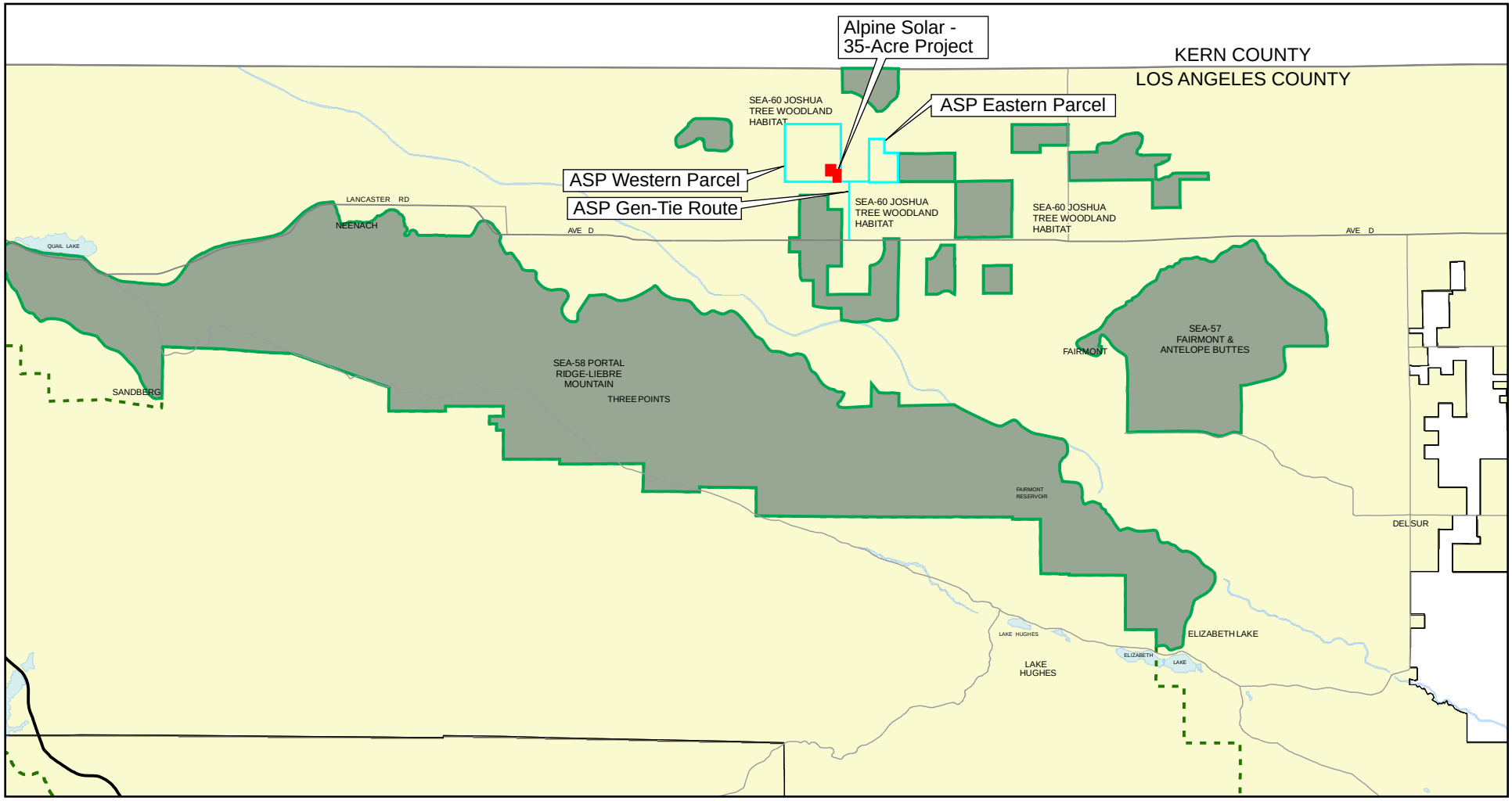
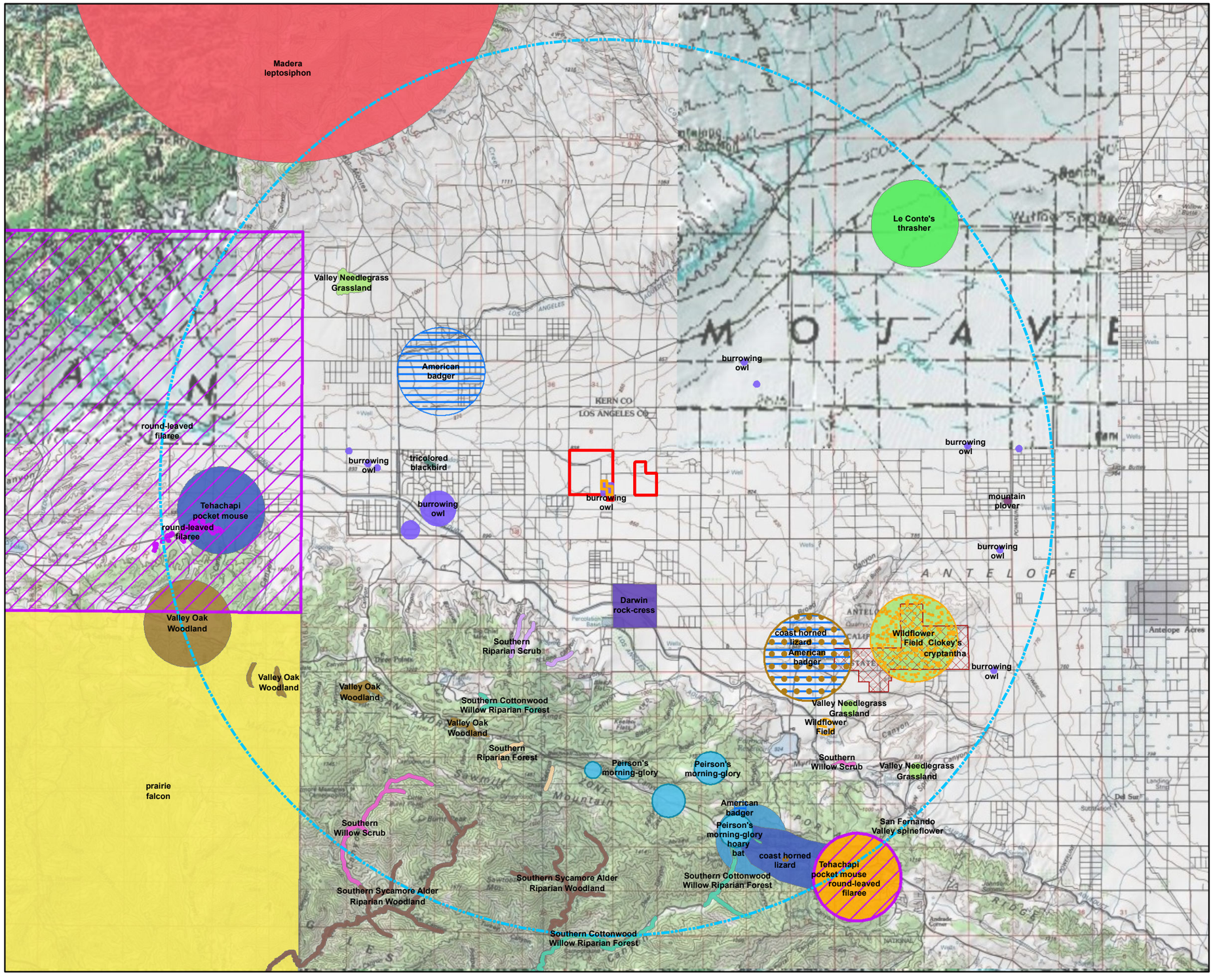


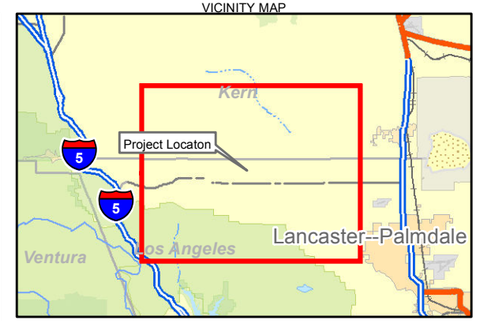
Figure BIOTA-1
Significant Ecological Areas
Alpine Solar Project

Source: Los Angeles County Department of Regional Planning

CH2MHILL



VICINITY MAP



LEGEND

- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Buffer - 10 miles

CNDDB

- American badger
- Clokey's cryptantha
- Darwin rock-cress
- Le Conte's thrasher
- Madera leptosiphon
- Peirson's morning-glory
- San Fernando Valley spineflower
- Southern Cottonwood Willow Riparian Forest
- Southern Riparian Forest
- Southern Riparian Scrub
- Southern Sycamore Alder Riparian Woodland
- Southern Willow Scrub
- Tehachapi pocket mouse
- Valley Needlegrass Grassland
- Valley Oak Woodland
- Wildflower Field
- burrowing owl
- coast horned lizard
- hoary bat
- mountain plover
- prairie falcon
- round-leaved filaree
- tricolored blackbird

N

0 2.25

Miles

FIGURE BIOTA-2
California Natural Diversity Database Species within 10 Miles
Alpine Solar Project

5. CULTURAL RESOURCES

Environmental Setting

The Project proposes 35 acres of additional land for placement of solar PV modules and related support facilities. The proposed Project would be constructed and operated as part of the approved ASP and the cultural resources survey conducted for the ASP in August 2008 included the Project site. Therefore, the Cultural Resources Survey conducted for the ASP is applicable to the proposed Project; and is incorporated by reference (Tetra Tech, 2008 and CH2MHILL 2010).

The Project surroundings consist primarily of farmlands, rural residences, and undeveloped areas, some of which are designated as Los Angeles County SEAs. The Project site includes disturbed, undeveloped land with varying degrees of previous disturbance due to previous agricultural activities. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community with both native and non-native vegetation.

Archaeological and Historical Resources

A detailed discussion of the prehistory, ethnography, and history of the Project area and its surroundings is available in the "Cultural Resources Survey of 600 Acres of Land for the Alta Vista Solar Generating Station Project Site, Los Angeles County, California" (Tetra Tech EC, Inc. [Tetra Tech], 2008a).

Tetra Tech conducted an archaeological and historical records search on February 22 and May 22, 2008, at the South Central Coastal Information Center of the California Historical Resources Information Center (CHRIS) at California State University, Fullerton. The records search included CHRIS files as well as a search of California Points of Historical Interest, California Historical Landmarks, CRHR, NRHP, California State Historic Resources Inventory, and historic maps Neenach (1943) and Willow Springs (1943).

The records search did not identify any cultural resources within the Project site. A single historic archaeological site was identified 0.5 mile west of the Project site. In addition, Tetra Tech noted two potentially historic structures in the Project surroundings—at the corner of West Avenue C and 220th Street West and at Neenach Substation—but did not record or evaluate them. In 2010, CH2M HILL visited the residential structure site and found that the structure had been removed.

Cultural resource surveys were conducted for the ASP in 2008 and 2010 (see Figure CULTURAL-1). Tetra Tech conducted the pedestrian survey of the Western Parcel of the ASP, which included the Project site. The Project site was found to have varying degrees of disturbance and the survey failed to locate cultural resources of any kind (Tetra Tech, 2008a).

The archaeological sensitivity of the survey area was found to be low. This finding is based on the negative survey results, the high degree of ground disturbance from agricultural activities, and the lack of any previously recorded cultural resource sites within 0.5 mile of the Project site.

As part of the Native American coordination conducted for the ASP, which included the Project site, a search of the Native American Heritage Commission's (NAHC's) Sacred Lands File was conducted with negative results. The NAHC forwarded a list of Native American groups and/or individuals that may have knowledge of cultural resources in the Project area. Tetra Tech sent a letter to each of these parties requesting information about such properties, but no responses were received.

Paleontological Resources

A literature and museum repository search performed as part of a CEC AFC by Tetra Tech in 2008 encompassed the ASP and Project site. The search included published and unpublished paleontological and

geological literature; geologic maps (Diblee, 1963; Wiese, 1950); and archives at the University of California Museum of Paleontology in Berkeley, California, and at the San Bernardino County Museum in Redlands, California. Although the review identified paleontological sites throughout the western Mojave Desert and the Tehachapi Mountains, it revealed no known sites within the ASP, Project site, or immediate vicinity. Archival research also revealed no known unique geologic features within the Project site.

A paleontological field reconnaissance survey was conducted by William Orr, Ph.D., and by Sheila Alfsen of Paleontology Associates from March 26 to March 28, 2008. The survey was conducted for the ASP, but included the Project site. During the field inspection, surveys were conducted within the area of potential effect for paleontological resources where natural exposures exist in the alluvium. The survey included inspection of visible ground surface and stratigraphy, sample collection for micro-vertebrates, and followup lab work. Examination exposures and landforms verified details of the geologic mapping in the area.

No salvageable fossils were recorded during the survey. However, findings of mammalian bone fragments, wood pieces, and leaf cuticles reflect the possibility of significant finds during construction, depending on the depth of excavation.

Tetra Tech concluded that the Project site surface layer is likely to be a zone of low paleontological sensitivity to a depth of approximately 6 feet. However, sediment deeper than 6 feet has the potential to contain areas of high paleontological sensitivity as evidenced by the presence of fossil materials observed in nearby areas.

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines § 15064.5?	☐	☐	☐	☒

Review of historical records and pedestrian surveys revealed no historic structures or sites within the Project boundaries. Historical records review included CHRIS files, California Points of Historical Interest, California Historical Landmarks, CRHR, NRHP, California State Historic Resources Inventory, and historic maps for Neenach (1943) and Willow Springs (1943). There would be no impact.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines § 15064.5?	☐	☒	☐	☐

The Project site does not contain features that may indicate potential archaeological sensitivity, such as rock outcroppings, knolls, oak trees, or springs. The Project site is not located in or near an area containing known archaeological resources. No cultural resources were identified at the Project site through archival records searches, including CHRIS files, California Points of Historical Interest, California Historical Landmarks, CRHR, NRHP, California State Historic Resources Inventory, and historic maps for Neenach (1943) and Willow Springs (1943). The sensitivity for cultural resources in this area is considered to be low, because no cultural resources were identified on the Project site through archaeological records searches, historical records searches, or pedestrian surveys. In addition, the Project site has a high degree of surface disturbance resulting from agricultural use. However, since the proposed Project will be integrated with the ASP, and would require excavation and grading during its construction phase, the potential cannot be ruled

out for the discovery of buried cultural resources not detected through surface inventory or through shovel testing. Any potential impacts to the archaeological resources can be made less than significant with proposed mitigation.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, or contain rock formations indicating potential paleontological resources?	☐	☒	☐	☐

The Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. No unique geological features exist on the site. Site surveys and paleontological records searches indicate that, although the upper 6 feet of sediment underlying the Project site is of low paleontological sensitivity, areas of high sensitivity may exist at depths greater than 6 feet. It is unlikely that construction activities will extend below a depth of 6 feet. Recommendations of the Project geotechnical engineer will be incorporated into final design plans; however, based on the preliminary assessment, the deepest ground-disturbing construction activities would be approximately 6 feet. As such, the proposed Project would not impact potential sensitive paleontological resources below a depth of 6 feet. Proposed mitigation measures would reduce potential impacts to paleontological resources to less than significant levels.

d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The Project is not likely to cause a substantial adverse change in the significance of a historical or archaeological resource as defined in 15064.5, nor is the Project likely to disturb human remains, including those interred outside of formal cemeteries. The sensitivity for cultural resources in this area is considered to be low, because no cultural resources were identified on the Project site through archaeological records searches, historical records searches, or pedestrian surveys. In addition, the Project site has a high degree of surface disturbance resulting from agricultural use. However, since the proposed Project will be integrated with the ASP, and would require excavation and grading during its construction phase, the potential cannot be ruled out for the discovery of buried cultural resources not detected through surface inventory or through shovel testing. Any potential impacts can be made less than significant with proposed mitigation.

Mitigation and Residual Impact

Potential impacts related to archaeological and historical resources would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances and (2) by implementing the following mitigation measures:

CULTURAL-1. If cultural resources or materials are discovered during ground-disturbing activities, work near the discovery should cease and the area should be protected until the find can be evaluated by a qualified archaeologist. Depending on the nature of the find, additional consultation with the SHPO or with Tribal leaders may be necessary before work can resume in the area of the find.

CULTURAL-2. If human remains are encountered, according to State Health and Safety Code Section 7050, no further disturbance will occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the NAHC, who will determine and notify a most likely descendant (MLD). The MLD may inspect the site of the discovery with the permission of the landowner or his or her authorized representative. The MLD

will complete inspection within 48 hours of notification by the NAHC. The MLD may then recommend scientific removal and analysis of human remains and any items associated with Native American burials.

CULTURAL-3. Prior to construction, the Applicant will retain a qualified paleontologist to design and implement a mitigation program where excavations deeper than 6 feet would occur.

CULTURAL-4. Prior to ground disturbance, all construction personnel will be given awareness training, which will include instruction in both verbal and written forms that cultural or paleontological resources may be encountered during construction.

Based on implementation of the above mitigation measures, the potential impacts associated with archaeological and historical resources would be reduced to a less than significant level.

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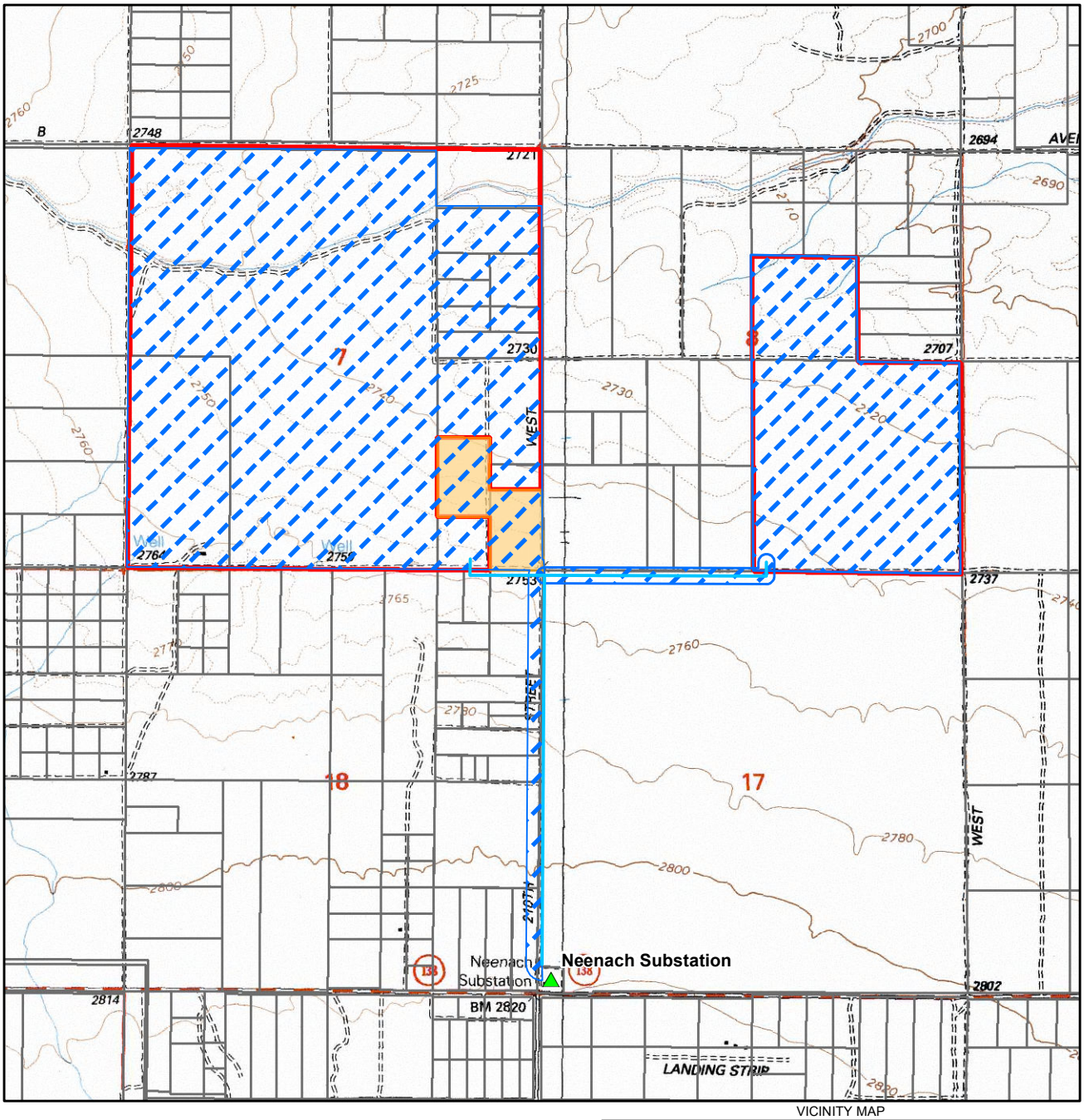

LEGEND

- Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Cultural Survey Area

VICINITY MAP

N

0 1,000 2,000

Feet

FIGURE CULTURAL-1
Cultural Survey Area
Alpine Solar Project

6. ENERGY

Environmental Setting

The Project site is located in a rural and sparsely populated area of the Antelope Valley in the northern portion of Los Angeles County. The area has excellent solar capacity due to the high desert climatic conditions.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Comply with Los Angeles County Green Building Standards? (L.A. County Code Title 22, Ch. 22.52, Part 20 and Title 21, § 21.24.440.)	☐	☐	☐	☒

Construction and operation of the Project will be integrated with the ASP and buildings required for the Project would be constructed as part of the approved ASP on the adjacent ASP property; no building construction is required for the Project. There would be no impact.

b) Involve the inefficient use of energy resources (see Appendix F of the CEQA Guidelines)?	☐	☐	☐	☒

The Project is proposed to be used for the placement of solar PV modules and related support facilities on a total of 35 acres; however, operation of the Project will be integrated with the ASP, resulting in a total of 835 gross acres. The Combined Project will continue to consist of a nominal 92 MWs of clean renewable energy delivered to the grid. This would be an efficient use of energy resources. There would be no impact.

7. GEOLOGY AND SOILS

Environmental Setting

The Project site is located in the western Mojave Desert within the Mojave Desert Geomorphic Province of California. According to the CGS, the Mojave Desert Geomorphic Province is a broad, interior region of isolated mountain ranges separated by expanses of desert plains (CGS, 2002). The broad alluvial basins in the province are of Cenozoic age and consist of sedimentary and volcanic materials overlying older plutonic and metamorphic rocks (Dibblee, 1980). The sites lie within the "Burnt Peak," "Neenach School," "Fairmont Butte," and "Lake Hughes" United States Geological Survey (USGS) Quadrangles.

The Mojave Desert province is defined by the northeast-trending Garlock fault zone, which is north of the Project site, and by the northwest-trending San Andreas fault zone, which is west and southwest of the Project site. The Garlock fault zone also characterizes the southern boundaries of the Sierra Nevada mountain range, the Tehachapi Mountains, the Sierra Nevada geomorphic province, and the Basin and Range geomorphic province. The regional geology, including faults, of the Project area is depicted on Figure GEO-1. The seismology of the Mojave Desert portion of the San Andreas and the Garlock fault zones is discussed further in the Seismic Setting subsection.

The Project site is located in the western portion of the Antelope Valley, which is a depressed basin in the western Mojave Desert. The valley was formed as a deep structural depression or a pull-apart basin formed between the two strands of the Garlock fault and is composed of Quaternary alluvial deposits that extend several thousand feet in depth (Harden, 2004).

The topography in the Project area is generally flat and slopes gently to the northeast at approximately 0.6 percent. The median ground surface of the Project site ranges from approximately 2,730 to 2,735 feet above mean sea level (USGS, 1965).

Seismic Setting

The Project site is located in a seismically active area of Southern California. Active fault zones are those that have experienced movement within the last 11,000 years; potentially active faults are those that have displayed movement within the last 1.6 million years. Active and potentially active faults are shown on Figure GEO-1; these faults are located within approximately 10 miles of the site and are characterized as follows:

- **San Andreas Fault Zone** (approximately 5 miles to the southwest): The San Andreas fault zone is a right-lateral, strike-slip fault that marks the transform boundary between the North American and Pacific plates. In California, the fault zone extends approximately 835 miles from the California-Mexico border northwest to the Mendocino Triple Junction, which is offshore of Northern California. West of the Project site, the fault zone's southern portion is characterized by complex, multiple active faults. Because of the compressed nature of this region (also called the Big Bend), slip along these faults tends to occur during large earthquakes. The last major surface rupture along the Mojave segment of the fault occurred during the 1857 Fort Tejon earthquake, which registered an approximate magnitude of 8.0 (Southern California Earthquake Center [SCEC], 2008; Harden, 2004).

- **Garlock Fault Zone** (approximately 12 miles to the northwest): The Garlock fault zone, a left-lateral, strike-slip fault, is one of the most structurally apparent geologic features in Southern California. It clearly marks the northern boundary of the Mojave Block, which is the tectonic region located between the Garlock and San Andreas faults that extends from northern Los Angeles County to the California-Arizona and California-Nevada borders. Sizeable earthquakes have been recorded along the Garlock fault zone. Although no earthquakes are known to have produced recent surface rupture along the Garlock fault, major ruptures dating to 1050 and 1500 A.D. have been identified near the towns of

Tehachapi and Johannesburg. According to the SCEC, the slip rate of this fault averages approximately 7 millimeters per year, and the interval between major ruptures along the fault ranges from 200 to 3,000 years (SCEC, 2008; Harden, 2004).

The County of Los Angeles General Plan (County of Los Angeles, 1990, Plate 1) does not identify the Project site as being located in an active or potentially active fault zone, nor is the Project site near major fault zones (the San Andreas fault, which lies approximately 5 miles to the southwest, is the nearest regional fault). The State of California has not mapped Seismic Hazard Zones for the Project region. According to the CGS, the site is not located within an Alquist-Priolo Fault Zone, and no active or potentially active faults have been identified on or adjacent to the Project site (CGS, 2008).

Soils

Information on types and distribution of soils within the Project area was derived from review of the National Resource Conservation Service (NRCS)—formerly the Soil Conservation Service—national database information Website and from official soil descriptions (NRCS, 2010). Soil types are characterized by soil map units that provide information on the soil series and phase. Soil series comprise soils exhibiting a common range of physical and chemical characteristics. Soil map units may contain soil inclusions that have different characteristics but are too small to be represented on the landscape-level scale used for mapping (scale 1:24,000; USGS Quadrangle Maps). The soil survey map information for the Project area is depicted on Figure GEO-2. A site-specific preliminary geotechnical report was prepared for the ASP, which included the Project site. This report is included as an appendix to the ASP MND and is incorporated by reference (GeoSoils, 2008).

Table GEO-1 provides the Los Angeles County soil survey identification of soils on the Project site (U.S. Department of Agriculture [USDA] NRCS, 2010).

TABLE GEO-1
Soil Mapping Units Description and Properties
Alpine Solar Project

Map Symbol	Map Unit Name and Description	Slope %	Depth to Bedrock (feet)	Erosion Susceptibility
HbA	Hanford coarse sandy loam. Deep to very deep, well to somewhat excessively drained, on alluvial fans.	0 to 2	≥5	Slight
VbA	Vernalis loam. Very deep, well drained, on alluvial fans.	0 to 2	≥5	Slight

The shrink-swell potential of the above-mentioned soils is low. Erosion hazard is slight for the Hanford coarse sandy loam, which is the most extensive soil on the Project site. Proper surface drainage would be important to reduce potential onsite erosion (see Figure GEO-2).

Site-specific Soil Setting

Based on the findings of GeoSoils Consultants, Inc. (2008), the Project site is underlain by Quaternary alluvium. The site's upper 5 feet reportedly consisted of brown, silty, fine sands and gray-brown, sandy silts that are moist and loose to soft. Similar, but moderately dense to dense, materials were encountered greater

than 5 feet below grade to the maximum depth explored during the geotechnical evaluation (51.5 feet below grade) (GeoSoils, 2008). Groundwater occurs at approximately 150 to 270 feet below grade.

A Phase I ESA was performed for the ASP and included the Project site. The purpose of the ESA was to identify RECs and to characterize the nature and general magnitude of impacts associated with any REC. The ESA is included as an appendix to the ASP MND and is incorporated by reference (Avalon Environmental Consultants, 2008 and 2010). According to the ESA findings, small quantities of pesticides and fertilizers may have been applied during prior farming activities. Some of the agricultural pesticides and fertilizers potentially used on the Project site could leave low-level, residual chemical constituents in the soil; however, based on the small quantities, it is unlikely that the soil or ground water on the Project site has been adversely impacted by use of pesticides and fertilizers. The findings of the ESA address the County of Los Angeles Fire Department, Health and Hazardous Materials Division comments to the ASP, dated September 20, 2010. It has been determined that no further site assessment, soil mitigation or management strategies are necessary.

Geologic Resources

Geologic resources typically include recreational and unique geologic areas or areas containing oil, gas, geothermal, and/or mining resources. There are no known recreational or unique geologic resources associated with the Project site, such as rock or mineral collection areas, surface hydrothermal features, or surface expressions of geologic features (such as natural bridges, caves, and waterfalls) to generate recreational interests (California State Parks and Recreation, 2008). The Antelope Valley California Poppy State Preserve is approximately 7 miles southeast of the site.

Based on a review of Division of Oil, Gas, and Geothermal Resources (DOGGR) oil and gas maps, no oil or gas resources exist beneath the Project site or in the adjacent areas (DOGGR, 2007).

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Be located in an active or potentially active fault zone, Seismic Hazards Zone, or Alquist-Priolo Earthquake Fault Zone, and expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault.	☐	☐	☐	☒

The County of Los Angeles General Plan (County of Los Angeles, 1990, Plate 1) does not identify the Project site as being located in an active or potentially active fault zone, nor is the Project site near major fault zones (the San Andreas Fault is the nearest regional fault and is located approximately 5 miles to the southwest). The State of California has not mapped Seismic Hazard Zones for the Project region. According to the CGS, the Project site is not located within an Alquist-Priolo Fault Zone, and no active or potentially active faults have been identified on or adjacent to the Project site (CGS, 2008). Therefore, no impact would occur.

ii) Strong seismic ground shaking? ☐ ☒ ☐ ☐

The Project is located in a seismically active area of Southern California and is therefore likely to be subjected to ground shaking from faults in the region. The active and potentially active faults include the San Andreas and Garlock fault zones, which are within 10 miles of the site. Based on available online Seismic Hazard Zone Maps prepared by the CGS, the Project site is located in an area that has not been mapped for seismic hazards (CGS, 2007). Based on the CGS's Probabilistic Seismic Hazards Mapping Ground Motion Page, there is a 10 percent probability of earthquake ground motion exceeding 0.557 of gravity at the Project site in a 50-year period (CGS, 2003).

Based on the preliminary geotechnical report prepared by GeoSoils Consultants, Inc., which includes soil borings, it appears that the Project will have no geotechnical impact (GeoSoils, 2008). A geotechnical report addressing both the ASP and proposed Project will be prepared by a licensed geotechnical engineer and filed with Building Permit plans for review and approval by the County Department of Public Works. Potential impacts related to geotechnical hazards would be minimized through compliance with applicable codes, standards, and ordinances. Therefore, impacts related to seismic ground shaking would be less than significant with mitigation.

iii) Seismic-related ground failure, including liquefaction? ☐ ☐ ☒ ☐

Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, sandy soils and results in the loss of soil shear strength. Liquefaction can lead to near-surface ground failure, which may result in loss of foundation support and/or differential ground settlement. As noted above, groundwater is approximately 150 to 270 feet below grade; therefore, liquefaction is unlikely. Impacts would be less than significant.

iv) Landslides? ☐ ☐ ☐ ☒

The Project area is not considered to have significant potential for permanent ground displacement resulting from landslides because surface topography at and near the site is relatively flat. In addition, a site reconnaissance and review of aerial photographs did not identify any active or inactive landslides at the site or nearby. There would be no impact.

b) Result in substantial soil erosion or the loss of topsoil? ☐ ☒ ☐ ☐

Erosion is the displacement of solids (soil, mud, rock, and other particles) by wind, water, or ice and by downward or downslope movement in response to gravity. Geologists refer to the gravity-driven, down-slope movement of earth materials as "mass wasting" (www.nature.nps.gov, 2010). Although Project site soil characteristics allow for potential wind and water erosion, because of generally flat terrain, the Project site would not be prone to significant mass wasting.

Construction of the Project would be integrated with the ASP; potential surface erosion from wind and water during construction activities would be managed through Best Management Practices (BMPs), which are expected to reduce water and wind erosion of soils to less than significant levels. BMPs will be required for the Combined Project in accordance with California's General Industrial Stormwater Permit for Construction Sites under the U.S. Environmental Protection Agency National Pollutant Discharge Elimination System Program and as noted in the California Regional Water Quality Control Board – Lahontan Region letter dated October 7, 2010. A SWPPP addressing both the ASP and proposed Project

will include erosion control measures, including BMPs, to reduce erosion and sedimentation. The finished surface of the site will be compacted and covered with gravel or a binding soil amendment. Water trucks would wet down the soil as needed during construction to control erosion, and mitigation measures to control erosion and reduce dust generation would be incorporated into the Project. Impacts related to erosion are therefore considered to be less than significant with mitigation.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? ☐ ☐ ☒ ☐

Ground failure related to subsidence occurs in the Project region predominantly along fault traces. Since no fault traces have been identified on or near the Project site, this type of subsidence hazard is considered low for the site. The Antelope Valley has experienced subsidence in areas resulting from groundwater pumping. However, the Project site is not located within an area affected by groundwater pumping-induced subsidence. Construction and operation of the proposed Project will be integrated with the ASP; the Combined Project will use up to 300 AF of water for construction and up to 2 AF annually for operation from onsite waterwells. For comparison, farming operations onsite historically have pumped 2,137 acre-feet per year (AFY). Impacts related to subsidence and ground settlement are considered to be less than significant.

The Project site is not subject to high groundwater; the estimated depth to groundwater is 150 to 270 feet below grade (GeoSoils, 2008). There would be no impact.

Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, sandy soils and results in the loss of soil shear strength. Liquefaction can lead to near-surface ground failure, which may result in loss of foundation support and/or differential ground settlement. As noted above, groundwater is approximately 150 to 270 feet below grade; therefore, liquefaction is unlikely. Impacts would be less than significant.

Hydrocompaction is the subsidence of shallow soils and sediments as a result of adding water to the land surface. Typically, this occurs in dry regions where agriculture relies on extensive irrigation. The sediments susceptible to hydrocompaction were loosely deposited in an arid or semi-arid environment by processes that left them with a very high porosity (> 45 percent). As these sediments dry out, their high-porosity structure is preserved by clay particles that act as "bridges" to cement the larger particles together. If water is added, the clay "cement" loses its strength, and the sediments subside under their own weight (www.UWSP.edu, 2010). Given that the Project is not agricultural or another use relying on extensive irrigation or water use, there would be no impact.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? ☐ ☐ ☒ ☐

Expansive soil consists of fine-grained clay and generally occurs naturally in areas of historical flood plains and/or lakes. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. As water is introduced into the soil by rainfall or watering, expansion takes place and the soil contracts when dried, which results in small fissures or cracks. Excessive drying and wetting of soil beneath foundations can progressively deteriorate structures because it can lead to differential settlement.

The preliminary geotechnical evaluation revealed that onsite materials exhibit medium expansion index (GeoSoils Consultants, Inc., 2008). The Project components are non-habitable solar PV modules and associated structures. A geotechnical report addressing both the ASP and proposed Project will be prepared by a licensed geotechnical engineer and would be filed with Building Permit plans for review and approval by the County Department of Public Works. Potential impacts related to expansive soils will be minimized through compliance with applicable codes, standards, and ordinances; therefore, impacts will be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

The soils onsite (see Table GEO-1 and Figure GEO-2) do not present any limitations for a septic system. However, the septic system permitted for the ASP through the Los Angeles County Department of Public Health would also serve the Project. Given that no onsite septic system or alternative wastewater disposal system would be required, no impact would occur.

f) Conflict with the Hillside Management Area Ordinance (L.A. County Code, Title 22, § 22.56.215) or hillside design standards in the County General Plan Conservation and Open Space Element?	☐	☐	☐	☒

As previously described, the site is relatively flat and therefore would not be subject to slope instability. There would be no impact.

Mitigation and Residual Impact

Potential impacts related to geotechnical hazards would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances; (2) by preparing and implementing a final geotechnical report containing site-specific recommendations for the Combined Project; and (3) by implementing the following mitigation measures:

GEOTECH-1. A final geotechnical report addressing both the proposed Project and the ASP will be prepared by a licensed geotechnical engineer and submitted to the LACDPW for review and approval prior to the issuance of grading permits. Recommendations of the geotechnical report will be incorporated into final design drawings and will be implemented during construction.

GEOTECH-2. Construction activities will be conducted in accordance with a SWPPP addressing both the proposed Project and the ASP, which will be completed and available onsite at all times during construction and will incorporate industry standard BMPs for erosion and dust control. BMPs will be installed, as appropriate, prior to the start of ground disturbance and will be maintained throughout Project construction.

Based on implementation of the above mitigation measures, the potential impacts associated with geotechnical hazards would be reduced to a less than significant level.

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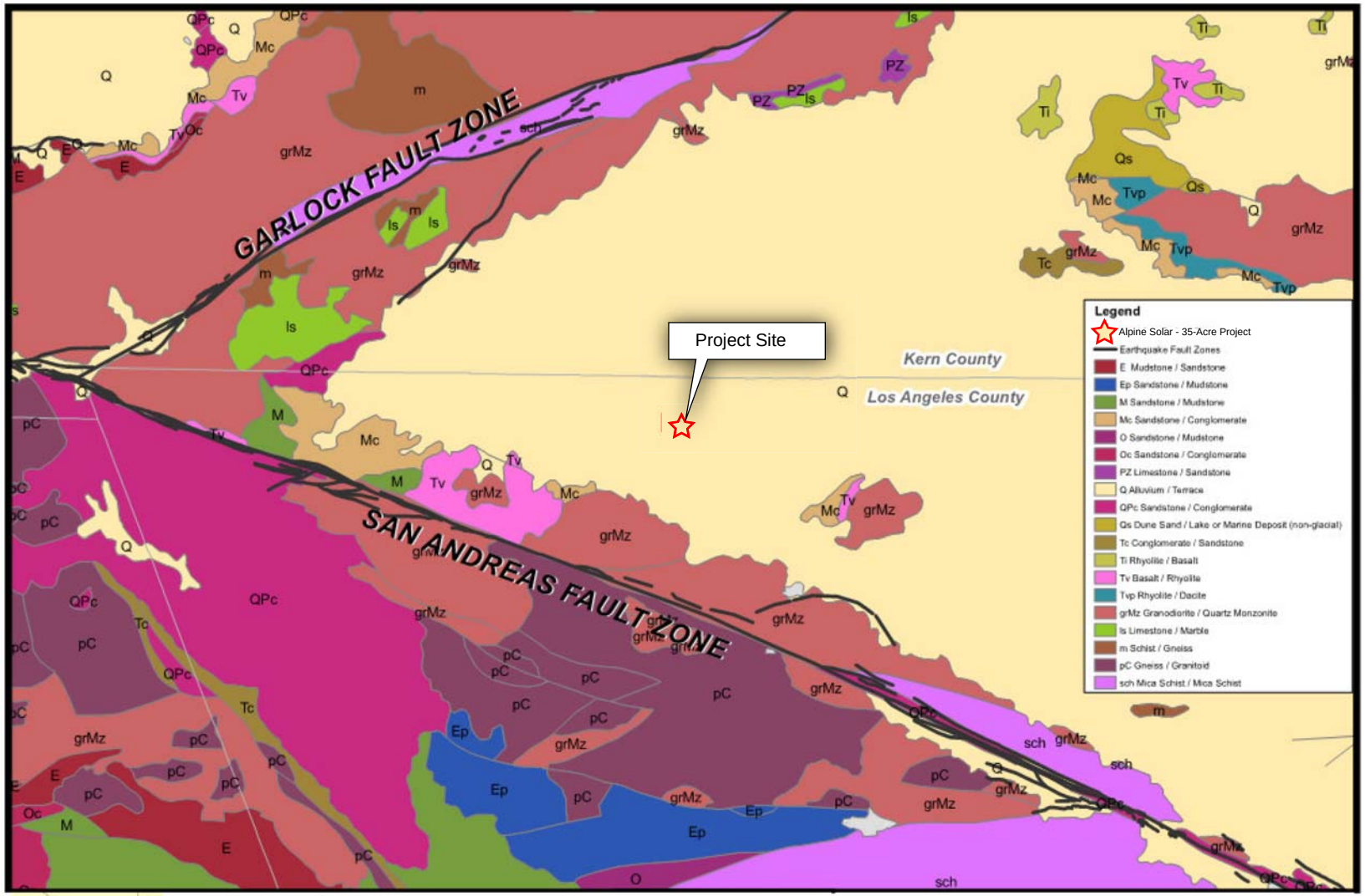
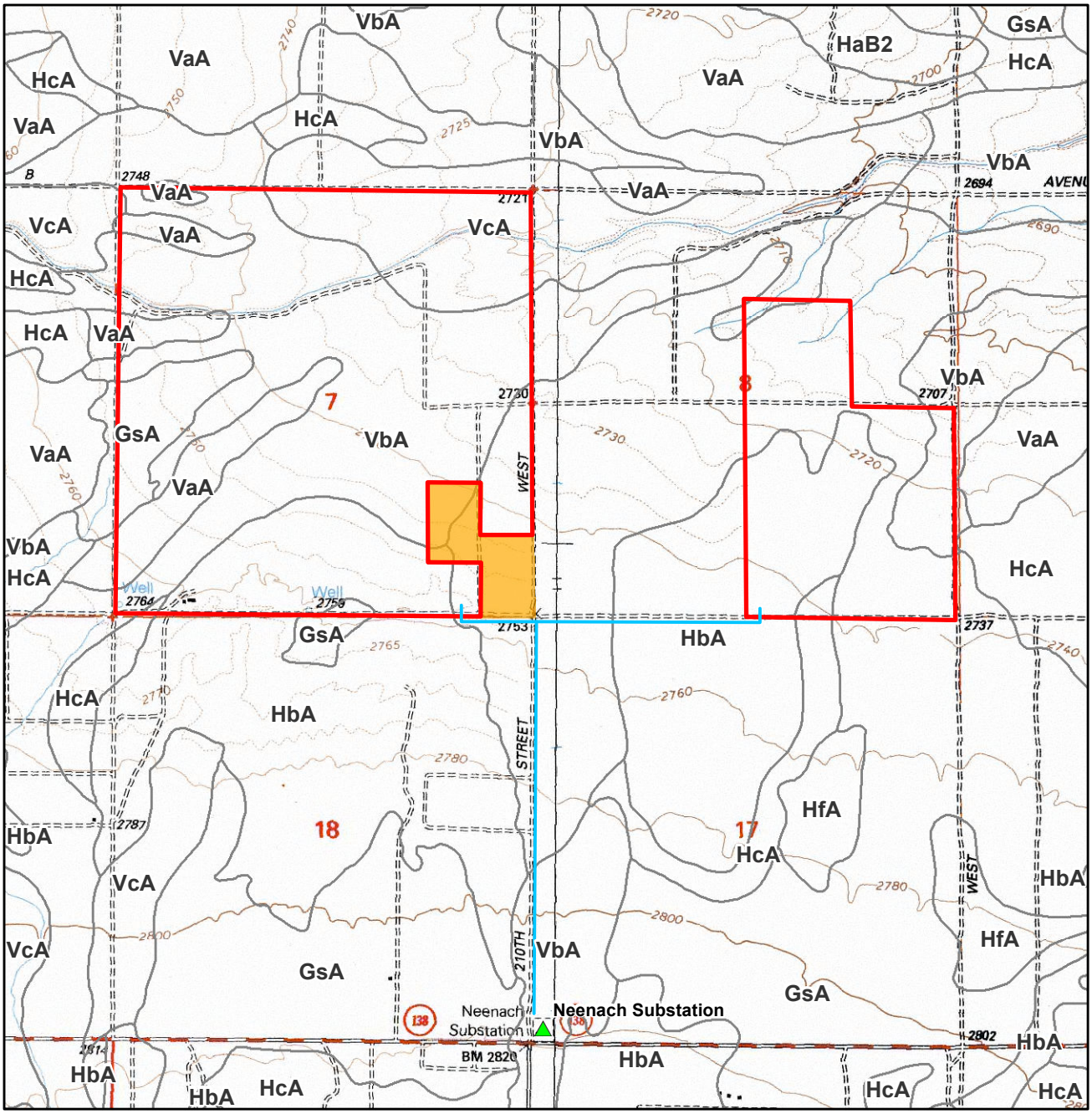


Figure GEO-1
Regional Geologic Map with Faults
Alpine Solar Project

Source: San Diego State University, compiled from Geology of California at 750,000 Scale, California Geological Survey.



LEGEND

- Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Soil Type

GsA - Greenfield sandy loam, 0 to 2 percent slopes
HaB2 - Hanford loamy sand, 2 to 5 percent slopes, hummocky
HbA - Hanford coarse sandy loam, 0 to 2 percent slopes
HcA - Hanford sandy loam, 0 to 2 percent slopes
HfA - Hanford loam, 0 to 2 percent slopes
VaA - Vernalis sandy loam, 0 to 2 percent slopes
VbA - Vernalis loam, 0 to 2 percent slopes
VcA - Vernalis clay loam, 0 to 2 percent slopes

Source: Natual Resources Conservation Service 2004

N

0 1,000 2,000
Feet

VICINITY MAP

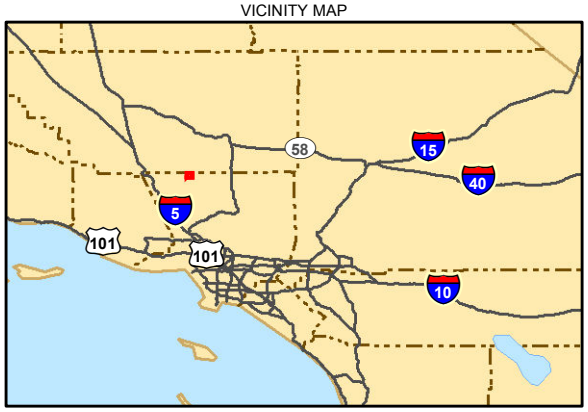


FIGURE GEO-2
Soil Mapping Units
Alpine Solar Project

8. GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Generate greenhouse gas (GhGs) emissions, either directly or indirectly, that may have a significant impact on the environment (i.e., on global climate change)? Normally, the significance of the impacts of a project's GhG emissions should be evaluated as a cumulative impact rather than a project-specific impact.	☐	☐	☒	☐

Operation of the Project would be integrated with the ASP. The Combined Project would generate clean, renewable electricity using sunlight energy. The proposed Project would help preserve petroleum resources, reduce greenhouse gas emissions, and would generate substantially less combustion emissions compared to conventional natural gas-fire power plants. However, circuit breakers on the Project site would contain sulfur hexafluoride (SF6). SF6 is a highly potent greenhouse gas, most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Since the 1950s, the U.S. electric power industry has used SF6 widely in circuit breakers, gas insulated substations, and other switchgear used in transmission systems. Several factors affect SF6 emissions from electric power systems, such as the type and age of the SF6-containing equipment (e.g., older circuit breakers can contain up to 2,000 pounds of SF6, while modern breakers usually contain less than 100 pounds), and the handling and maintenance procedures practiced by electric utilities.

On June 21, 2007, as part of the California Global Warming Solutions Act of 2006 (AB 32) the California Air Resources Board (CARB) approved the reduction of SF6 emissions from electricity transmission and distribution equipment as an early action measure. Accordingly, CARB staff, in collaboration with interested stakeholders, is developing a control measure to address these emissions. In the interim, proposed regulatory language has been prepared by the CARB but is not in effect (http://www.arb.ca.gov/cc/sf6elec/sf6elec.htm 2010).

Additionally, the EPA has established the SF6 Emission Reduction Partnership, a voluntary industry program aimed at reducing greenhouse gas emissions. The Partnership's primary objective is to reduce SF6 emissions via cost-effective technologies and practices. Through improvements in the leak rate of new equipment, refurbishing of older equipment, and the use of more efficient operation and maintenance techniques, utilities often find economical solutions to reduce SF6 emissions.

The Antelope Valley Air Quality Management District and Los Angeles County do not currently have any pending or existing regulations pertaining to SF6.

The overall net benefit from reducing greenhouse gas emissions through solar PV technology reduces potential impacts to less than significant.

b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases including regulations implementing AB 32 of 2006, General Plan policies and implementing actions for GhG emission reduction, and the Los Angeles Regional Climate Action Plan?	☐	☐	☒	☐

Please refer to the discussion in a) above.

References

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9. HAZARDS AND HAZARDOUS MATERIALS

Environmental Setting

The Project site is not located on a known site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The Project would not create a significant hazard to the public or to the environment.

The Project area is located within the Edwards AFB R 2508 Complex. The R 2508 Complex includes all the airspace and associated land currently used and managed by the three principal military activities in the Upper Mojave Desert region: Air Force Flight Test Center, Edwards AFB; National Training Center, Fort Irwin; and Naval Air Weapons Station China Lake. Regulations for the R 2508 Complex include guidance for aircraft over populated areas; these regulations reduce the hazards for people residing or working in the Project area.

The Project site is not located in a Very High Fire Hazard Severity Zone (Fire Zone 4). The Project site lies in the Moderate Fire Hazard Severity Zone (California Department of Forestry and Fire Protection. Website: http://www.fire.ca.gov/fire_prevention/fhsz_maps/fhsz_maps_losangeles.php).

The Project is not located in a high fire hazard area. For dust control, Project roads will be treated with a dust palliative compacted over native soils. The site will be graded, as necessary, using a balanced cut-and-fill approach, without imported fill except for drainage control riprap rock material and structural pad engineered base materials. The Project would be constructed with adequate access.

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, storage, production, use, or disposal of hazardous materials or use of pressurized tanks on-site?	☐	☐	☒	☐

A Phase I ESA was performed for the ASP, and included the Project site. The purpose of the ESA was to identify RECs and to characterize the nature and general magnitude of impacts associated with any REC. The ESA is included as an appendix to the ASP MND and is incorporated by reference (Avalon Environmental Consultants, 2008 and 2010). According to the ESA findings, small quantities of pesticides and fertilizers may have been applied during prior farming activities. Some of the agricultural pesticides and fertilizers potentially used on the Project site could leave low-level, residual chemical constituents in the soil; however, based on the small quantities, it is unlikely that the soil or ground water on the Project site has been adversely impacted by use of pesticides and fertilizers. The findings of the ESA address the County of Los Angeles Fire Department, Health and Hazardous Materials Division comments to the ASP, dated September 20, 2010. It has been determined that no further site assessment, soil mitigation or management strategies are necessary.

The proposed Project will be integrated with the ASP and construction would require the short-term transport, use, or disposal of hazardous materials, such as fuels, lubricants, adhesives, solvents, and asphalt wastes. The potential risk associated with the accidental discharge during use and storage of such construction-related hazardous materials during construction of the proposed Project and the ASP is considered low. This is because the handling of these materials would be addressed through the

implementation of BMPs pursuant to the intent of the National Pollutant Discharge Elimination System General Construction Permit.

Operation of the proposed Project will be integrated with the ASP and generation of additional hazardous waste in the form of biodegradable dielectric fluid and mineral oil from the transformers and miscellaneous electrical equipment would be negligible. The spent oil will be collected and delivered to a recycling company when it is removed from the equipment. This waste material will not be stored on the Combined Project sites. If thin film modules containing cadmium-telluride are installed, the materials contained within the solar modules could be a potential hazardous waste. In the event of a thin film module malfunction, the module manufacturer's pre-funded recycling program will be used to collect and recycle the modules.

Some of the onsite electrical equipment may require the use of SF6 (discussed in Section 8. Greenhouse Gas Emissions). SF6 is not regulated as a hazardous substance or extremely hazardous substance under CERCLA, but meets the definition of a hazardous material for which reporting of a release would be required under California's hazardous materials release reporting requirements, unless the release did not pose a threat to human health or the environment.

Use or storage of significant quantities of hazardous materials beyond the dielectric fluid, mineral oil and SF6 required for the ASP would be negligible; therefore, no substantial potential for accidental explosion or major releases of hazardous substances is expected. No pressurized tanks will be used onsite.

Workers will be trained to properly identify and handle hazardous waste in the event it is generated at the Project site. No battery backup component exists, which minimizes the need for transporting, using, or disposing of the hazardous materials that may be associated with the Project. Furthermore, standard operating procedures would prevent the use of fuels, lubricants, adhesives, solvents, asphalt wastes, biodegradable dielectric fluid, and cadmium-telluride from causing a significant hazard to the public or environment. Therefore, impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or waste into the environment?	☐	☐	☒	☐

Construction of the proposed Project would be integrated with the ASP, requiring the short-term use of construction-related lubricants and fuel. Operations of the proposed Project would be integrated with the ASP and would require the use of biodegradable dielectric fluid, SF6, and mineral oil from the transformers and miscellaneous electrical equipment. Workers will be trained to properly identify and handle hazardous waste to minimize any potential risk of release of hazardous materials into the environment. Therefore, impacts would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 500 feet of sensitive land uses (e.g., homes, schools, hospitals)?	☐	☐	☐	☒

No residential units, schools, or hospitals are located within 500 feet of the Project site. The nearest sensitive receptor is located at the intersection of 192nd Street and West Avenue C, which is approximately 7,000 feet from the Project site. The nearest school, Neenach Elementary School, is located approximately 6 miles west of the Project site. No impacts would occur as a result of implementing the Project; therefore, no mitigation measures are required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment? ☐ ☐ ☐ ☒

The Project is not located on a known site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The Project would not create a significant hazard to the public or the environment. No impacts would occur as a result of implementing the Project; therefore, no mitigation measures are required.

e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? ☐ ☐ ☐ ☒

The Project area is located within the Edwards AFB R 2508 Complex. The R 2508 Complex includes all the airspace and associated land currently used and managed by the three principal military activities in the Upper Mojave Desert region: Air Force Flight Test Center, Edwards AFB; National Training Center, Fort Irwin; and Naval Air Weapons Station China Lake. Regulations for the R 2508 Complex include guidance for aircraft over populated areas; these regulations reduce the hazards for people residing or working in the Project area.

The operation of the proposed Project would be integrated with the ASP and the only substantial aboveground modifications would be the solar arrays, with a maximum height of approximately 8 feet. This height is not sufficient to impact air traffic. The solar development is an allowable use in the area; as a result, there would be no impact on air traffic patterns. No impacts would occur as a result of implementing the Project; therefore, no mitigation measures are required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? ☐ ☐ ☐ ☒

The Project is not near a private airstrip. The nearest privately owned airport is the Skyottee Ranch Airport, which is located approximately 5 miles to the northeast of the Project area. No impacts would occur as a result of implementing the Project; therefore, no mitigation measures are required.

g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? ☐ ☐ ☐ ☒

Activities associated with the proposed Project would not impede existing emergency response plans for the Project site and/or for other land uses in the Project vicinity. All vehicles and stationary equipment would be staged off public roads and would not block emergency access routes. No impacts would occur as a result of implementing the Project; therefore, no mitigation measures are required.

h) Expose people or structures to a significant risk of loss, injury or death involving fires, because the project is located: ☐ ☒ ☐ ☐

The Project involves construction and operation of solar PV power generation facilities. Construction and operation of the Project will be integrated with the ASP and will require use of construction equipment, including vehicles, generators, and hazardous materials (e.g., fuels, lubricating oils, and welding materials), which pose potentially dangerous fire hazards. The temporary use of construction and maintenance equipment and associated flammable fuels would be managed in accordance with applicable county, state, and federal requirements. Mitigation Measure FIRE-1 requires a Fire Protection and Prevention Plan, including a hazardous material and hazardous waste management program, for both construction and operation phases that would outline proper hazardous materials use, storage, and disposal requirements. Implementation of Mitigation Measure FIRE-1 would reduce potential impacts associated with fire hazards to less than significant.

Operation of the solar PV facility would require equipment that uses flammable oils, lubricants, and fuels, which pose a potential fire hazard. Overall maintenance of the facility would include proper storage of flammable materials, upkeep of operating equipment, and management of vegetative growth. The Project will comply with additional LACFD requirements. Implementation of Mitigation Measure FIRE-1, which requires the development of a Fire Protection and Prevention Plan, would reduce the potential impacts associated with fire hazards to less than significant. Therefore, the Project would not constitute a potentially dangerous fire hazard. Therefore, impacts would be less than significant with mitigation.

i) in a Very High Fire Hazard Severity Zones (Zone 4)? ☐ ☐ ☐ ☒

As shown on Figure FIRE-1, the Project site is not located in a Very High Fire Hazard Severity Zone. Therefore, no impact would occur.

ii) in a high fire hazard area with inadequate access? ☐ ☐ ☒ ☐

The Project site is located in an area with fire hazard risk resulting from low rainfall and high temperatures, typical of desert conditions. The fire stations nearest to the Project site are shown on Figure FIRE-2. Primary access to the site is via SR 138 to 210th Street West; improvements will be made as part of the Combined Project to provide access that complies with Fire Department and Department of Public Works requirements, per Fire Department comments submitted for the ASP. The Project is adequately served by the existing roadway systems, where the regional freeways serving the site consist of the I 5 freeway and SR 14, and the local roadways serving the site consist of SR 138, 210th Street West, and 220th Street West. The Project would not require installation of permanent left-turn lanes along the primary roadways because of low O&M traffic volumes associated with Combined Project operation (one to two permanent staff would work at the facility) and is not expected to require substantial roadway modifications (e.g., creation of new roads or turns, expansion of road widths, etc.). Therefore, impacts would be less than significant.

iii) in an area with inadequate water and pressure to meet fire flow hazards? ☐ ☐ ☒ ☐

A public water system for fire control does not exist in the Project area. Fire water storage facilities provided for the ASP will accommodate the Project. These facilities will include connections for fire truck hook-up and will be designed in accordance with Fire Department regulations. Therefore, impacts would be less than significant.

iv) in proximity to land uses that have the potential for dangerous fire hazard (such as refineries, flammables, and explosives manufacturing)? ☐ ☐ ☐ ☒

The Project site is generally surrounded by agricultural and open space uses. No potential dangerous fire hazard uses such as refineries, flammable, and/or explosives manufacturing have been identified in proximity to the Project site. The structure nearest the Project site is a residence approximately 7,000 feet from the property boundary. Therefore, no impact would occur.

Mitigation and Residual Impact

Potential impacts related to fire hazards would be mitigated to an insignificant level through compliance with applicable codes, standards, and ordinances and by implementing the following mitigation measures:

FIRE-1. Prepare a Fire Protection and Prevention Plan that addresses both the proposed Project and ASP and submit it to the LACFD for review and approval prior to issuance of a grading permit.

The Plan will address construction and operation activities for the Project and will establish standards and practices that will minimize the risk of fire danger; in the case of fire, immediate suppression and notification would be provided. The Fire Protection and Prevention Plan will include, at a minimum, the following elements: procedures in the event of fire; hazardous material and hazardous waste management program; vegetation clearing; fire suppression equipment and routine maintenance; hazardous material storage, use, and disposal; employee safety training; and safety signage. The Project Sponsor will implement the approved Fire Protection and Prevention Plan throughout construction of the Project and throughout the operational life of the Project.

The Project will comply with appropriate Fire Department Land Development Unit codes, ordinances and requirements.

Based on implementation of the above mitigation measure, the potential impacts associated with fire hazards would be reduced to a less than significant level.

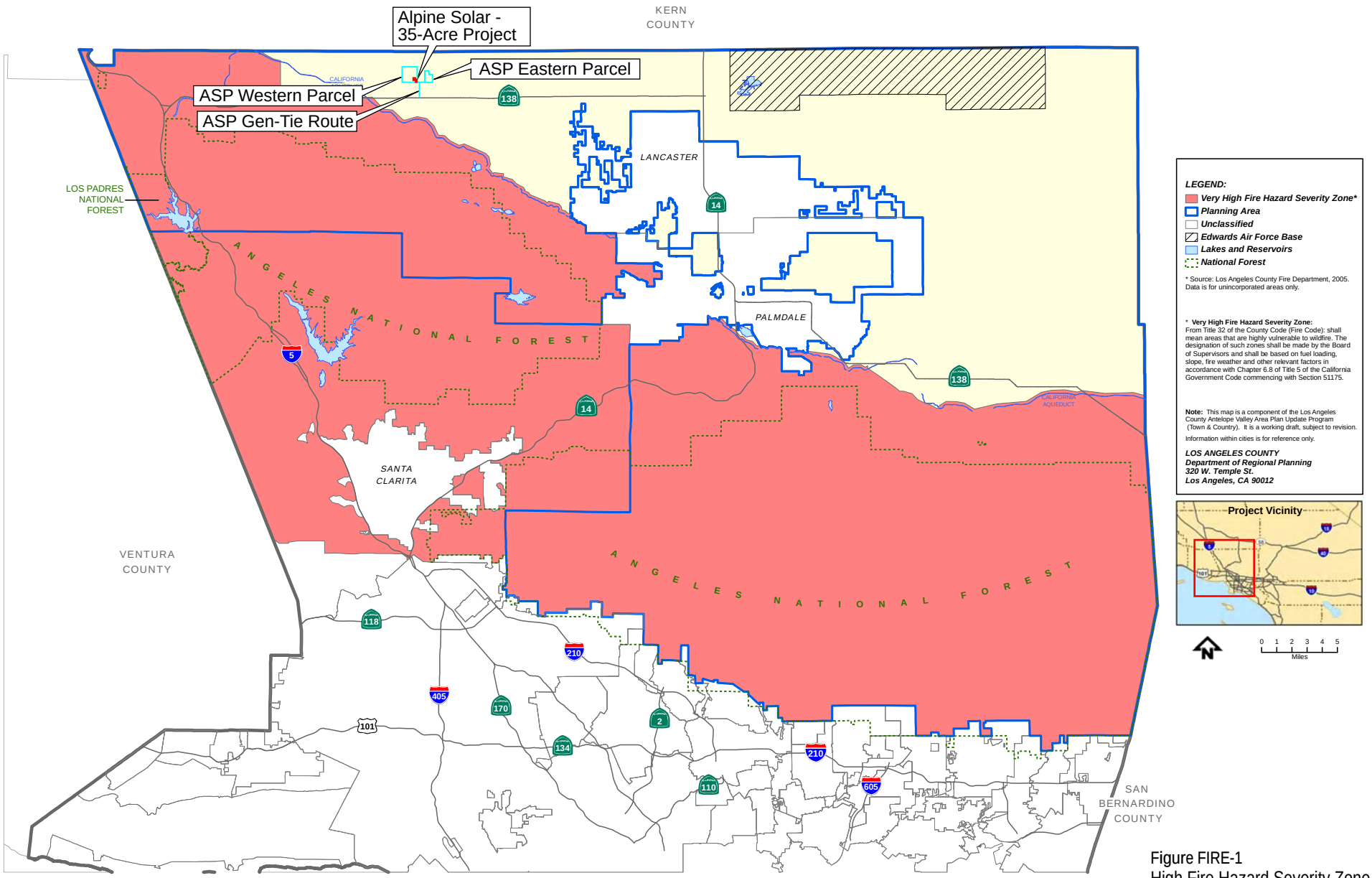
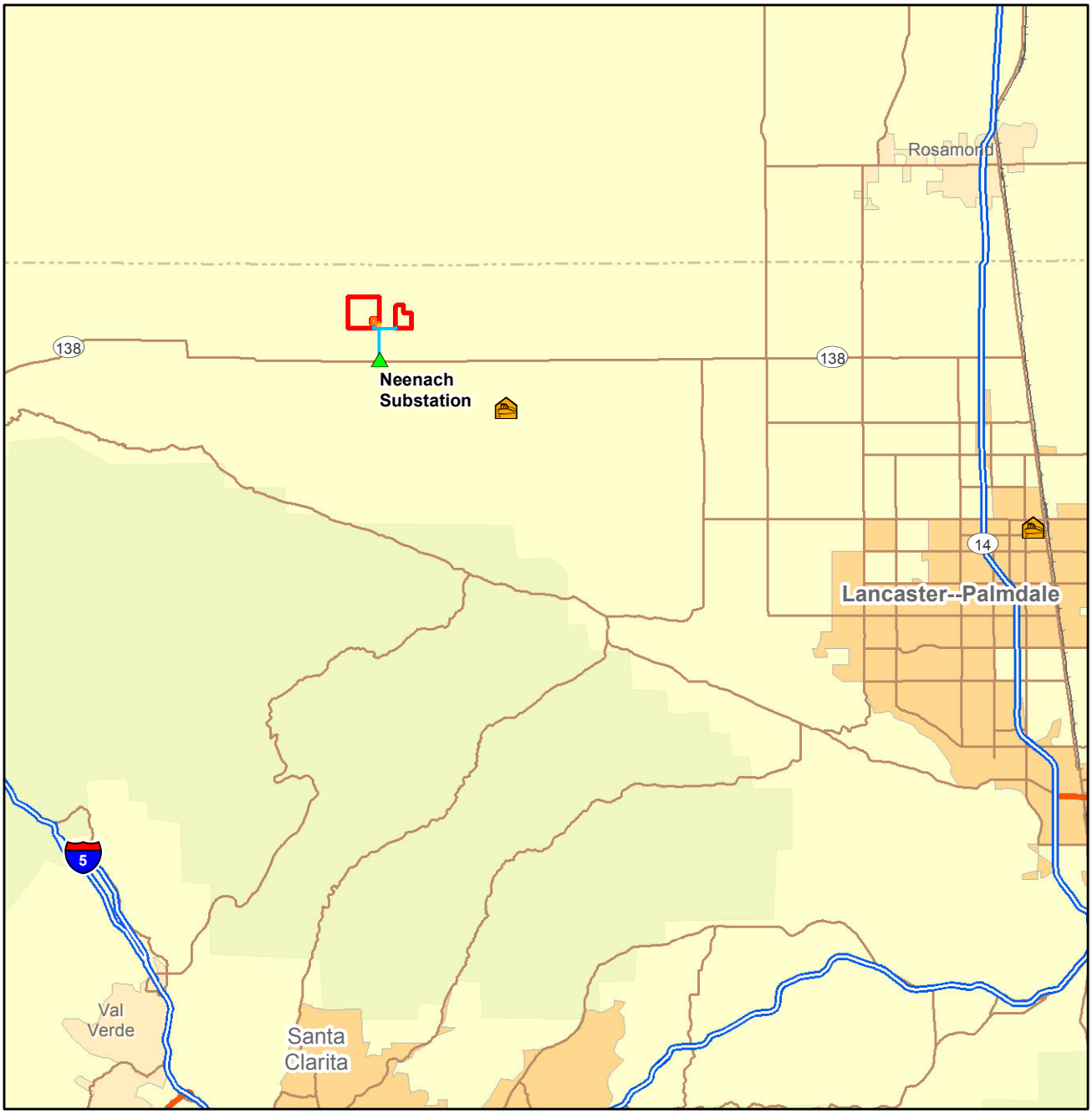


Figure FIRE-1
High Fire Hazard Severity Zone
Alpine Solar Project

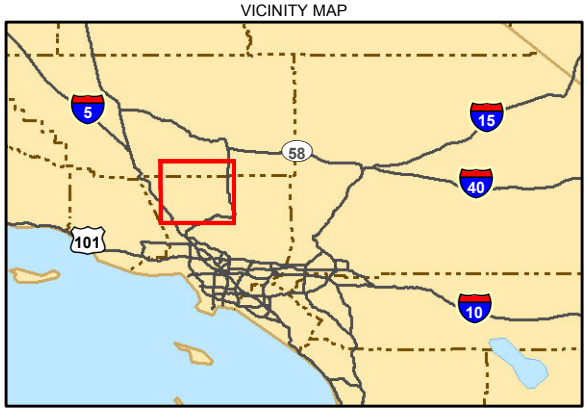
CH2MHILL



LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Fire Station

VICINITY MAP



N

0 2.5 5

Miles

FIGURE FIRE-2
Location of Fire Stations
Alpine Solar Project

10. HYDROLOGY AND WATER QUALITY

Environmental Setting

The proposed Project would be constructed and operated as part of the approved ASP. The following regional and site-specific technical reports appended to the ASP MND are applicable to the Project site and are incorporated by reference: hydrology and water quality characterizations in the Preliminary Hydrology and Hydraulics report prepared by Joseph E. Bonadiman & Associates (Bonadiman, 2010) and the Water Requirements and Groundwater Supply technical memorandum prepared by Luhdorff and Scalamanini (Luhdorff and Scalamanini, 2010).

The Project site is located in the western Antelope Valley, in the Mojave Desert of Southern California. The Mojave Desert is characterized by barren mountain ranges and isolated hills with broad alluvial-filled valleys.

Groundwater

The site is located in the Antelope Valley Groundwater Basin (AV Basin) (Figure WATER-1), which is part of the southwestern portion of the South Lahontan Hydrologic Region (DWR, 2004). The ASP and Project site were previously used for agricultural production. The ASP site has five water wells: three agricultural wells and two domestic wells. Water supply for the Project (construction and operation) would be groundwater pumped from the three existing production wells located on the ASP site. Historic water use from the ASP groundwater wells has been estimated at 2,137 AFY. During construction of the Combined Project, up to approximately 300 AF of water may be required for soil conditioning and dust suppression. Water use during construction would be temporary. Operational water use for the Combined Project will be less than 2 AFY, which includes water for periodic PV module washing and for domestic (potable) water.

The following discussion presents a summary of Antelope Valley groundwater hydrogeology, including anticipated Project conditions. The discussion of historical water requirements, water supplies, sustainable groundwater yield, and water availability is copied from *Water Requirements and Groundwater Supply – AV Solar Ranch 1*, prepared June 1, 2010 by Luhdorff & Scalmanini Consulting Engineers (Luhdorff & Scalmanini, 2010). The report was prepared for the nearby AV Solar Ranch One project, and is believed by LADRP to represent the best available description of regional groundwater supplies as they apply to the Project.

Hydrogeologic Setting

The Project site is located in the southwestern portion of the South Lahontan Hydrologic Region. This hydrologic region occupies approximately 21.2 million acres in southern and eastern California. This region is geologically and hydrologically varied and includes the areas with the highest and lowest elevations in the continental United States: Mount Whitney and Death Valley, respectively. The South Lahontan Hydrologic Region is bounded on the west by the Sierra Nevada crest, to the north by the watershed divide between Mono Lake and the East Walker River drainages, to the east by the Nevada border, and to the south by the crests of the San Gabriel and San Bernardino mountains. The South Lahontan Hydrologic Region includes the Owens, Mojave, and Amargosa river systems, the Mono Lake drainage system, and many other internally drained basins (RWQCB-LR, 2004).

The South Lahontan Hydrologic Region is subdivided into 76 groundwater basins that cover approximately 18,100 square miles (DWR, 2004). The Project site area is located in the AV Basin (6-44). This basin occupies 1.1 million acres; it is bounded to the northwest by the Garlock fault zone at the base of the Tehachapi Mountains, and is bounded to the southwest by the San Andreas fault zone at the base of the San Gabriel Mountains (DWR, 2004). The basin is also bound to the east by ridges, buttes, and low hills and to the north by the Fremont Valley Groundwater Basin.

According to DWR (2004), there are two primary aquifers in the AV Basin, the lower and upper aquifers, with a specific yield ranging from 1 to 30 percent. The upper aquifer is the primary source of groundwater for the basin (DWR, 2004). However, a study by USGS (2003), which culminated in a groundwater model for the AV Basin, identified three water-bearing zones (an upper, middle, and lower aquifer) in some areas of the basin. USGS (2003) describes the upper aquifer as unconfined to confined with a storage coefficient of 2.5×10^{-4}, the middle aquifer as present between 1,950 and 1,550 feet amsl with a storage coefficient of approximately 2.0×10^{-4}, and the lower aquifer as present between 1,550 feet amsl and the underlying bedrock with a storage coefficient of approximately 10.0×10^{-4}. The total storage capacity has been estimated to be 70 million AF (DWR, 2004). Past studies estimated the average natural annual recharge for the AV Basin at approximately 48,000 AF (DWR, 2004). The latest published pumping rate for the AV Basin is estimated to be approximately 90,000 AFY (Carollo, 2005).

Water Wells

Wells at the ASP site, which would also serve the Project site, draw groundwater from the Neenach subbasin of the AV Basin. Groundwater in the Neenach subbasin generally moves to the northeast into the confined aquifer of the Lancaster subbasin, which is the largest subbasin in the AV Basin (USGS, 2003). The Lancaster subbasin includes most of the major urban centers of the Antelope Valley (such as Lancaster, Quartz Hill, Rosamond, and Palmdale). These cities and associated water districts use groundwater in addition to surface water deliveries from the SWP. Depth to groundwater in the Neenach subbasin is relatively high for the AV Basin, ranging from 150 to 350 feet below ground surface (USGS, 2003). At the ASP and Project sites, the static groundwater is present at approximately 2,670 feet amsl (USGS, 2003).

The ASP site contains three agricultural production wells and two domestic wells. Groundwater for the Project will be supplied by three of the agricultural production wells located on the ASP site. The ASP agricultural production wells are described in Table WATER-1.

TABLE WATER-1
Summary of Existing Agricultural Production Wells at the ASP Site

Groundwater Well	Location	Perforation Depth	Historical Use (AFY)	Projected Use (AFY)*
Well 08N15W07N002S (agricultural production well; not currently in use)	Along West Avenue C (southwest corner of Western Parcel)	Unavailable	None	0-2
Well 08N15W07P001S (agricultural production well)	Along West Avenue C on Western Parcel	300 to 750 feet below top of casing	1,137	0-2
Well 08N15W08L001S (agricultural production well)	East of 210th Street Western on Eastern Parcel	Unavailable	1,000	0-2

AFY: acre-feet per year

* Projected use is based on the water requirements of the integrated operation of the proposed Project with the ASP (2 AFY). A range is shown among the three available agricultural production wells because it is unknown at this time which of these wells would be used for the project's water supply. Water use during operation would be fixed at a maximum of 2 AFY over the 20-year projection period.

Historical Water Requirements

Total historical water requirements in the Antelope Valley, consisting of agricultural, municipal and industrial (M&I), and environmental water uses, are illustrated in Figure WATER-2. The total water requirements have varied greatly throughout the historical period, primarily affected by agricultural water use. During the period of agricultural expansion through 1950, the Antelope Valley experienced the greatest increase in water requirements from early development to nearly 360,000 AFY. Agricultural water demand comprised the vast majority of the total requirements through that period, increasing to nearly 350,000 AFY by 1950; at that time, M&I use was about 10,000 AFY. During the period of peak agricultural activity through the early 1970s, total water requirements remained high, between about 300,000 and 370,000 AFY. Through that period, agricultural water use was slightly declining, and M&I water requirements were gradually increasing, from about 10,000 to 30,000 AFY.

With the subsequent significant decline in agricultural activity through the early 1990s, total water requirements substantially decreased, from approximately 300,000 to about 150,000 AFY, primarily as a result of the substantial decline in agricultural water demand from about 260,000 AFY to about 70,000 AFY. During the latter half of that period of agricultural decline, M&I water requirements increased from about 30,000 AFY to about the same as the agricultural water demand, about 70,000 AFY, by 1990. Both agricultural and M&I water requirements increased at comparable rates throughout the 1990s. By 2000, total water requirements, by then including a small amount for environmental uses, had increased to approximately 255,000 AFY. Since 2000, total water demand has remained generally stable, a result of a generally offsetting increase in M&I water use and decrease in agricultural water use. By 2006, the agricultural water demand was about 114,000 AF; total M&I water requirements were about 118,000 AF (105,000 AF for all uses by the main purveyors and about 13,000 AF of municipal-type use by mutual, small private and rural residential users); and environmental water use was about 9,600 AF to maintain wetlands and recreational lakes.

Water Supplies

Prior to 1972, essentially all water requirements in the Antelope Valley were met by local groundwater, augmented by a small amount of local surface water, generally less than 3,000 AFY, diverted from Littlerock Creek. Beginning in 1972, supplemental water has been imported into the Antelope Valley from the SWP to augment the local water supplies. Water is imported from the SWP, with contract amounts totaling 165,000 AFY (although that total amount is not available in all years).

Littlerock Creek diversions have been stable since 1946, typically providing a total of 1,000 to 3,000 AFY of local surface water toward agricultural and M&I water supplies. There have been only a few years, in the 1960s and in 2002, when water was not available for diversion. Beginning in the mid-1990s, coincident with the dam rehabilitation project (during which time the dam was also raised 12 feet, increasing the reservoir's capacity), total diversions have typically exceeded 3,000 AFY and in some years have approached 7,000 AFY, all toward M&I water supplies.

Beginning in 1976, about 27,000 AF of SWP water were delivered for agricultural irrigation supplies. Imported SWP water for irrigation notably increased into the early 1980's, reaching a peak of nearly 64,000 AF in 1981. Since then, deliveries of SWP water for agricultural irrigation have been notably smaller, approaching 40,000 AF in only one year (1982) and less than 30,000 AF in all other years. Over the decade through 2006, deliveries of SWP water for agricultural use ranged between approximately 7,000 and 28,000 AFY and averaged about 15,000 AFY. They increased to nearly 18,000 AF in 2007, and then substantially declined to near 3,500 AF in 2008.

SWP deliveries for municipal water supply nearly linearly increased since the early 1980's, to about 70,000 AFY in 2006 and 2007, followed by decreased delivery of about 52,000 AF in 2008. Combined SWP

deliveries for agricultural and municipal water supply reached a peak of nearly 90,000 AF in 2007, but declined to about 55,000 AF in 2008 (Figure WATER-3).

Overall, groundwater pumping to meet both agricultural and M&I water requirements in the Antelope Valley has ranged from as much as 370,000 to 380,000 AFY in the 1950's-1960's to slightly less than 90,000 AFY by 1990. Since then, total groundwater pumping has increased, as high as about 175,000 AFY by 2002, followed by a decline to nearly 150,000 AF in 2005, and to slightly less than 135,000 AF in 2006 and 2007, followed by an increase to about 160,000 AF in 2008 (Figure WATER-4).

Recycled water from both LACSD14 (Lancaster) and LACSD20 (Palmdale) water reclamation plants has been utilized for agricultural irrigation and environmental water use in the Antelope Valley since at least the early 1990s. Use of recycled water for irrigation and environmental water supply has steadily increased over recent time, from approximately 1,100 and 3,800 AFY for irrigation and environmental uses, respectively, in 1988, to about 11,800 and 9,600 AFY, respectively, in 2006. Total recycled water use for irrigation and environmental supplies in the AVAA is now about 20,000 AFY (Figure WATER-5).

Sustainable Groundwater Yield

The sustainable yield of a groundwater basin is considered to be the amount of pumping that, for given land use conditions, produces return flows which, in combination with other recharge, result in no long-term depletion of groundwater storage. Based on a combination of estimated natural recharge to the groundwater basin, utilization of supplemental water and its contribution to groundwater recharge, and land use practices in the Antelope Valley that utilize water in different ways and thus contribute different amounts of return flows as contributions to groundwater recharge, estimates of sustainable (production) yield have been made for both "native" and "supplemental" conditions. Under native conditions, return flows derive from the use of local groundwater only; those return flows are the only source of recharge other than natural recharge that derives from local precipitation and runoff within the watershed surrounding the Antelope Valley. Under supplemental conditions, return flows include the use of local groundwater plus any purposeful recharge of supplemental water.

Since agricultural and municipal-type land uses contribute different return flow fractions that, in turn, contribute to the sustainable yield of the groundwater basin, sustainable yield is not necessarily a constant and can thus be a variable that is dependent on prevailing land use in the basin. To capture the variations in the preceding factors, which are commonly described as part of cultural conditions in a given basin, two sets of sustainable yields were prepared for the Antelope Valley: one set for different mixes of land use under "native" conditions, where only natural recharge is the primary source of sustainable groundwater supply in the basin; and a second set, also for different mixes of land use but under "supplemental" conditions, where natural recharge is augmented by recharge from the use of supplemental water supplies such as has occurred with the importation of SWP water since the 1970's.

Throughout the periods considered for estimating sustainable yield of the AV Basin, the respective proportions of agricultural and municipal-type land uses have been comparable, with both increasing in the late 1990's, followed by some agricultural decline in the 2000's and general stability in municipal-type land use over that same time. Under "native" conditions, largely independent of variations in prevailing land uses since the mid-1990's, the native sustainable yield of the AV Basin is about 82,300 AFY. However, for the five-year period prior to the filing of the current adjudication, average use of supplemental water was nearly 68,000 AFY. Its use augmented natural recharge sufficiently to support total sustainable groundwater yield of nearly 108,000 AFY. Since then, use of supplemental water increased to an average of about 73,000 AFY over the 1996-2005 period, and to 73,500 AF in 2005; those uses augmented natural recharge to support increases in total sustainable yield to about 110,000 AFY. While "rights" to all the total sustainable yield are not equally distributable to all interests in the Antelope Valley, in part because separate priorities attach to the increases attributable to supplemental water use, both the "native" sustainable yield of 82,300 AFY and

the total sustainable yield of 110,000 AFY are used in order to place the water requirements of the proposed Project in a quantitative context.

Water Availability

The sustainable groundwater yield values described above can conservatively be reported to be the smallest values that have been publicly represented by any of the parties to the ongoing Antelope Valley adjudication. Thus, while this Initial Study cannot report what the court might determine with regard to sustainable groundwater yield, it is unlikely that the court would determine the total sustainable yield to be any smaller than about 110,000 AFY, and not determine the native sustainable yield to be any smaller than about 82,300 AFY. Total sustainable yield could be allocated first to attribute a portion to the importers who are responsible for the importation of supplemental water that results in the associated increase in total groundwater yield; the remainder of total sustainable yield, or "native" yield, will then most logically be allocated in such a way that, in aggregate based on an average unitized pumping allocation, total pumping will not exceed sustainable yield. Pumpers, including agricultural, mutual, and M&I would likely be allocated the majority of the remaining groundwater on an equitable basis, followed by some provision for the dormant overlayers. Under this approach, even in a worst case scenario (e.g., court-ordered reduction of pumping by 40 percent), the groundwater likely made available to this project will exceed the demands of the project and fall below the safe yield of the basin. Looking at the matter in a different way and for illustration purposes only, if the matter were to proceed by direct apportionment without regard to any priority, at the size of the Antelope Valley adjudication area – 1,390 square miles or about 890,000 acres – native sustainable yield equates to nearly 0.1 AFY, and the total sustainable yield without regard to attribution for importation of supplemental water, the unitized total sustainable yield would be about 0.125 AFY. While this latter view is not likely to be enacted, it does demonstrate that because of the substantial reduction in pumping, the remaining ground water use will be below the safe yield under any logical theory of distribution, and therefore is not a significant impact.

Groundwater Quality

According to DWR, the chemical character of groundwater varies in the South Lahontan Hydrologic Region. The water is often calcium type or sodium bicarbonate type; however, near and beneath dry lakes in the region, sodium chloride type and sodium sulfate-chloride type water is common. In general, groundwater beneath the edges of the valleys contains lower total dissolved solids (TDS) content than water beneath the central portions of the valleys or beneath the dry lakes. Drinking water standards in the basin are most often exceeded for TDS, fluoride, nitrates, and/or boron concentrations. TDS concentrations in the AV Basin average 300 milligrams per liter (mg/L) and generally range between 200 and 800 mg/L (DWR, 2004). Water quality in public supply wells is summarized in Table WATER-2.

Three military installations in the Antelope Valley and Mojave River Valley exhibit groundwater contamination from volatile organic compounds (VOCs) and other hazardous contaminants related to site uses (DWR, 2004). These installations are located in the eastern portion of the basin and are hydraulically downgradient from the Project site; therefore, there is no expectation that groundwater wells in the Project area have been impacted by these contaminants.

TABLE WATER-2
Water Quality in Public Supply Wells, Antelope Valley Basin

Constituent Group	Number of Wells Sampled	Number of Wells with a Concentration Greater than an MCL
Inorganics – Primary	214	25
Radiological	183	6
Nitrates	243	8
Pesticides	207	2
VOCs and SVOCs	207	4
Inorganics – Secondary	214	39

Notes:
MCL = maximum contaminant level
SVOC = semivolatile organic compound
VOC = volatile organic compound
Source: DWR, 2004

Surface Water

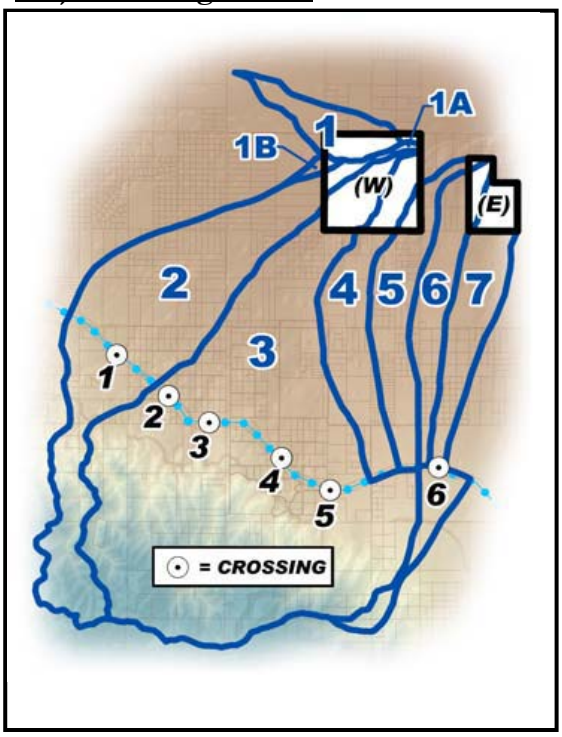
The Project site is located in the Antelope Valley Watershed, which is a large, closed basin in the western Mojave Desert. This watershed straddles the Los Angeles-Kern County line and drains a total of 3,387 square miles. Approximately 80 percent of the watershed is characterized by a low to moderate slope (0 to 7 percent). The remaining 20 percent consists of foothills and rugged mountains, some of which reach up to 3,600 feet in elevation. The floor of the Antelope Valley Watershed generally lacks defined natural channels outside of the foothills and is subsequently subject to unpredictable sheet flow patterns (AVSREIR, 2010).

All water that enters the watershed either infiltrates into the underlying groundwater basin, or flows toward three playa lakes located near the center of the watershed. A playa lake is formed when rain fills a playa, or a depression in the surface of the ground. Playa lakes usually have no outflow of water. The playa lakes in the Antelope Valley Watershed are all located on Edwards Air Force Base, approximately 15 to 30 miles northeast of the Project site. They include Rosamond Lake, Rogers Dry Lake, and Buckhorn Dry Lake. These playa lakes are usually dry, and only receive water following large winter storms. Surface runoff that collects in the dry lakes evaporates, and only a small quantity of water infiltrates to the groundwater because of the nearly impermeable nature of the playa soils (AVSREIR, 2010).

Surface water in the AV Basin drains via intermittent stream channels to Rosamond Lake, a dry lake bed approximately 21 miles east of the Project site. No permanent water bodies are located on the Project site. Based on the Preliminary Hydrology and Hydraulics report, the Project site is located outside of any identified floodplain and is within FEMA Zone "X" (see Figure FLOOD-1) (Bonadiman, 2010). The existing conditions watershed defined for the ASP Project (and applicable to the Project is approximately 12,232 acres in size, and consists of nine Major Drainage Areas, as shown below (Bonadiman, 2010).

Alpine Solar Project and Alpine Solar – 35-Acres Project

Major Drainage Areas



Joseph E. Bonadiman and Associates, 2010.

A natural drainage channel runs east-west across the northern portion of the adjacent ASP Western Parcel; due to topography, the proposed Project naturally drains toward the adjacent ASP Western Parcel.

Precipitation

The Project site is located in the Mojave Basin, which is classified as a dry-hot desert climate (BWh), although some portions of the basin are classified as dry-very hot desert (BWhh). Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south. Average precipitation in the South Lahontan Hydrologic Region is 1.3 million AFY (DWR, 2004). The AV Basin averages between 3 and 7 inches of rain per year, with 16 to 30 days of the year experiencing at least 0.1 inch of precipitation. At least 3 months of the year have average maximum temperatures in excess of 100.4°F.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

Please refer to the discussions in b) through f), and h) below.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

☐ ☐ ☒ ☐

The Project would use groundwater extracted from water wells located on the ASP site to meet the estimated Combined Project water requirements of about 2 AFY on an ongoing basis for domestic and maintenance purposes. This is substantially less than the historical water use for the ASP site (estimated to be approximately 2,137 AFY for recent farming activity). Compared to typical land uses, where unit water requirements for both agricultural and municipal land uses are within an overall range of about 3 to nearly 7 AFY (Luhdorff & Scalmanini, 2010), the water requirements associated with the Combined Project are exceptionally small. In addition, these water requirements are substantially less than the 0.1 to 0.125 AFY of available water if sustained yield is allocated as discussed above under Water Availability.

The Combined Project would also use groundwater to meet the estimated water requirements of about 300 AFY during construction (a period of about 12-18 months). This is exceptionally small compared to typical agricultural and municipal land uses, is much less than the 2,137 AFY recently used on the ASP site, and would be temporary. Therefore, impacts would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

☐ ☐ ☒ ☐

As described above, the Project would require site grading and preparation to place the PV modules. These structures are placed on steel piers or piles driven into the prepared soil sub-base and elevated at least 12 inches above ground. Water can flow unimpeded beneath the PV modules and therefore would not impact flows across the Project site. Soil would be preserved onsite through vegetation, natural soil amendments, and/or gravel. No changes to the nearest drainage channel, which is located on the adjacent ASP Western Parcel, would occur from the Project. Therefore, impacts would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

☐ ☐ ☒ ☐

As shown on Figure FLOOD-2, there are no permanent major water courses on the Project site. Historical flows, as noted in the Preliminary Hydrology and Hydraulics Report, drain to the large channel that traverses the northern portion of the ASP Western Parcel (Bonadiman, 2010). While this channel is considered the primary receiving water for the Project, the Project would not affect the drainage course. Impacts would be less than significant. Project components would not impede flows across the Project site, as the solar PV modules are elevated above the ground at least 12 inches. All flows would still be directed to the drainage channel in a non erosive manner and would not cause changes to the downstream conditions. Therefore, impacts would be less than significant.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems? ☐ ☐ ☒ ☐

Preliminary engineering plans are designed to convey runoff to mirror existing flow patterns. Current flows drain to the drainage channel on the adjacent ASP Western Parcel; there are no existing or planned stormwater drainage systems in the vicinity of the Project site. Review and approval of the final site engineering plans by the Department of Public Works would ensure that drainage flows do not contribute polluted runoff. Impacts would be less than significant.

f) Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality? ☐ ☒ ☐ ☐

The primary concern with impacts to surface water or groundwater quality related to construction activities is hazardous material infiltration, sedimentation, and soil erosion. Hazardous materials, such as solvents associated with mechanized equipment, would be stored and used in accordance with manufacturer's specifications and applicable hazardous material regulations, reducing potential impacts to groundwater to less than significant levels.

An SWPPP incorporating BMPs for erosion control would be prepared to address the Combined Project and would be approved before the start of construction. During site preparation, the SWPPP would be implemented, and initial erosion and sedimentation controls would be installed. This plan would be in accordance with the SWRQCB's regulations for construction, including Land Development Guidelines 1 through 16 of Chapter 4.8 of the Water Quality Control Plan for the Lahontan Region. The Combined Project will also comply with applicable post-construction water quality standards adopted by the RWQCB or the SWRCB. These plans would detail the mitigation measures that would be used at the site, such as the construction of local soil berms and a detention area to contain stormwater runoff, the establishment of temporary erosion control measures (such as the installation of silt fences and fiber rolls) to minimize erosion in active grading areas, and the use of water for dust control.

Finally, the depth of groundwater is expected to be at least 150 feet below grade (GeoSoils, 2008). Because of the depth to groundwater, the short-term and temporary nature of construction, and the implementation of SWPPP BMPs as described above (which would minimize the potential for construction-related discharges and associated impacts), it is not expected that construction of the facility would have a significant impact on surface water or groundwater quality during construction.

No significant wastewater would be generated from operation of the PV modules. The PV module washwater would be demineralized water and would contain only dust washed off the panels. This washwater would be allowed to soak into the ground and evaporate as it drips off the PV modules. Operation of the Project would, therefore, not degrade the quality of stormwater runoff or contribute potential pollutants from non-stormwater discharges. Therefore, with the implementation of mitigation, impacts would be less than significant.

g) Conflict with the Los Angeles County Low Impact Development Ordinance (L.A. County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52)? ☐ ☐ ☐ ☒

As previously discussed, preliminary engineering plans are designed to convey runoff to mirror existing flow patterns. Current flows drain to the drainage channel on the adjacent ASP Western Parcel; there are no existing or planned stormwater drainage systems in the vicinity of the Project site. Review and approval of the final site engineering plans by the Department of Public Works would ensure that drainage flows do not conflict with the low impact development ordinance. As the Project would comply with the low impact development ordinance, no impacts would occur.

h) Generate construction or post-construction runoff that would violate applicable stormwater NPDES permits or otherwise significantly affect surface water or groundwater quality?	☐	☐	☒	☐

Please refer to the discussion in f) above.

i) Result in point or nonpoint source pollutant discharges into State Water Resources Control Board-designated Areas of Special Biological Significance?	☐	☐	☐	☒

The Project is not located in a SWRCB-designated Area of Special Biological Significance. Therefore, no impact would occur.

j) Use septic tanks or other private sewage disposal system in areas with known septic tank limitations or in close proximity to a drainage course?	☐	☐	☐	☒

No domestic wastewater will be generated as part of the Project and as such, no septic system is required.

k) Otherwise substantially degrade water quality?	☐	☐	☒	☐

The Project not located in an area known to have water quality problems, based on ASP pump test data, as well as AV Solar Ranch One project historical data and groundwater studies and analysis, both of which are applicable to the Project (AVSREIR, 2010).

The proposed Project would not require increased water use to that stated for the ASP. Water use for the integrated construction and operation of the Combine Project would require up to 300 AF during construction and up to 2 AF during operation. Historical water use from the groundwater wells on the ASP site is estimated to be 2,137 AFY. Therefore, groundwater extraction associated with the Combined Project is not expected to have a significant impact on the AV Basin or on the groundwater supply in the area. Existing water wells on the ASP site may be used for PV module washing and other operation water. Domestic water supply during construction would be supplied by bottled water. Domestic water during operations would be supplied by treated well water. Based on the well data and pump test results, potential impacts related to water quality associated with Project use of groundwater from the ASP site are not expected, and impacts would be less than significant.

l) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or within a floodway or floodplain?	☐	☐	☐	☒

The project does not propose construction of housing. No impacts would occur.

m) Place structures, which would impede or redirect flood flows, within a 100-year flood hazard area, floodway, or floodplain?	☐	☒	☐	☐

The Project is located within FEMA Zone X and not within a floodway or floodplain or designated flood hazard zone. The proposed solar PV modules are placed on steel piers or piles driven into the prepared soil sub-base and elevated above the ground at least 12 inches. Water can flow unimpeded beneath the modules and therefore would not impact flows across the Project site. Additionally, a Final Hydrology and Hydraulics Report addressing the permitted ASP and proposed Project will be prepared. This report will identify appropriate design features that will be implemented to further minimize flooding potential. Therefore, with the implementation of mitigation impacts would be less than significant.

n) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐

The Project is not located in an area with levees or dams. As noted above, final grading and drainage plans would account for drainage across the Project site and discharge flows in the same manner as current drainage patterns. Therefore, impacts would be less than significant.

o) Place structures in areas subject to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

The topography of the Project site is generally flat; therefore, the potential for mudflow is minimal. The site would not be impacted by seiche or tsunami as the site is not adjacent to a lake, bay, sea, or ocean. No impact would occur.

Mitigation and Residual Impact

Potential impacts related to water quality and flood hazards would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances; (2) by implementing the previously identified mitigation measure related to preparation of a SWPPP prepared for the Combined Project, as required by the mitigation measure GEOTECH-2; and (3) by implementing the following mitigation measure:

FLOOD-1. A final Hydrology and Hydraulics Report addressing both the proposed Project and ASP will be prepared that includes recommendations to address potential design and flood constraints. The final report will be provided to the Department of Public Works prior to issuance of grading permits for the Project. The design features included in the final report will be implemented.

Based on implementation of the above mitigation measures, the potential impacts associated with water quality and flood hazards would be reduced to a less than significant level.

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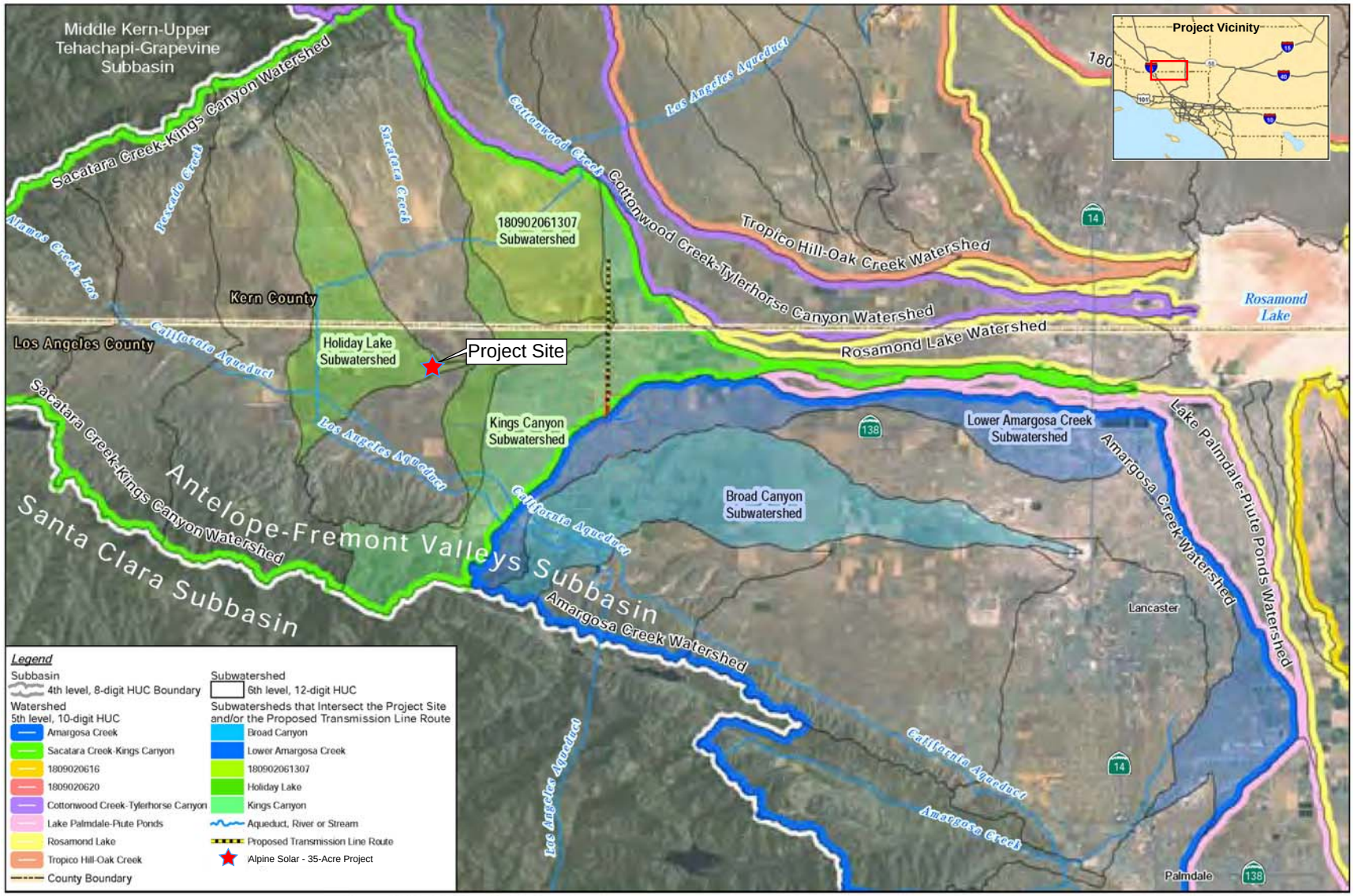

Figure WATER-1
Groundwater Basin
Alpine Solar Project

Source: San Diego State University, compiled from Geology of California at 750,000 Scale, California Geological Survey.

CH2MHILL

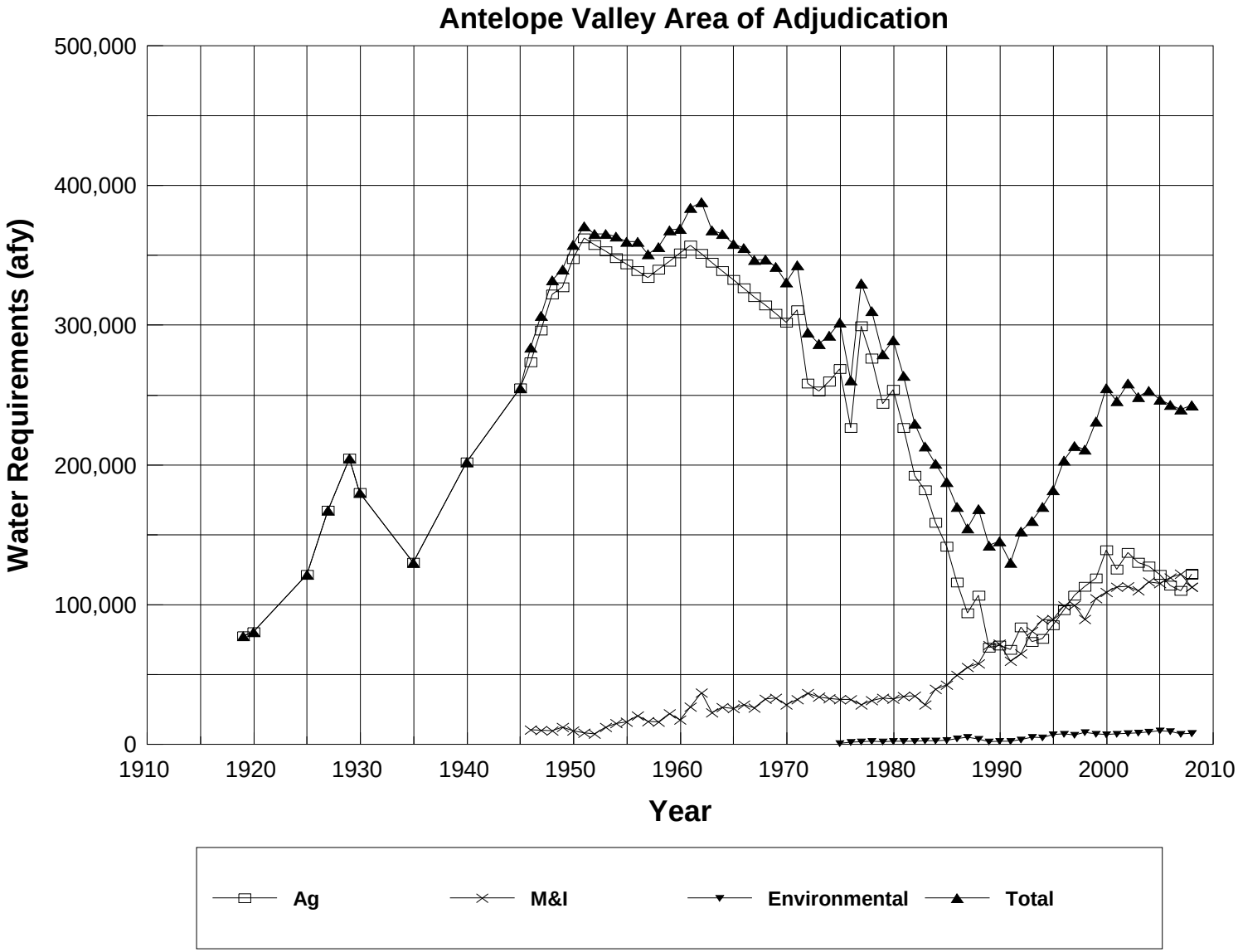

Figure WATER-2
Estimated Historical Total Water Requirements
Alpine Solar Project

CH2MHILL

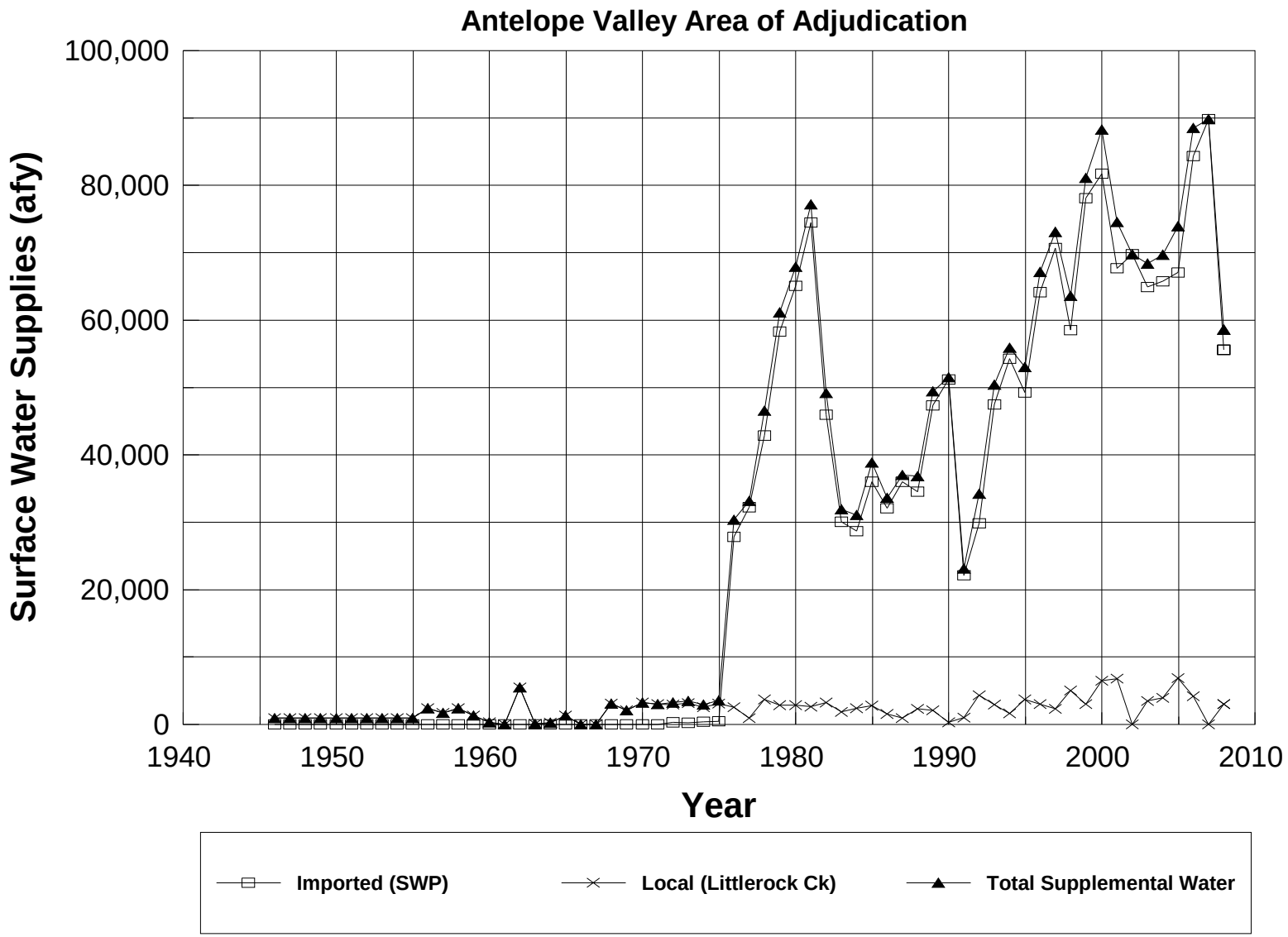

Figure WATER-3
Historical Supplemental Surface Water by Source
Alpine Solar Project

CH2MHILL

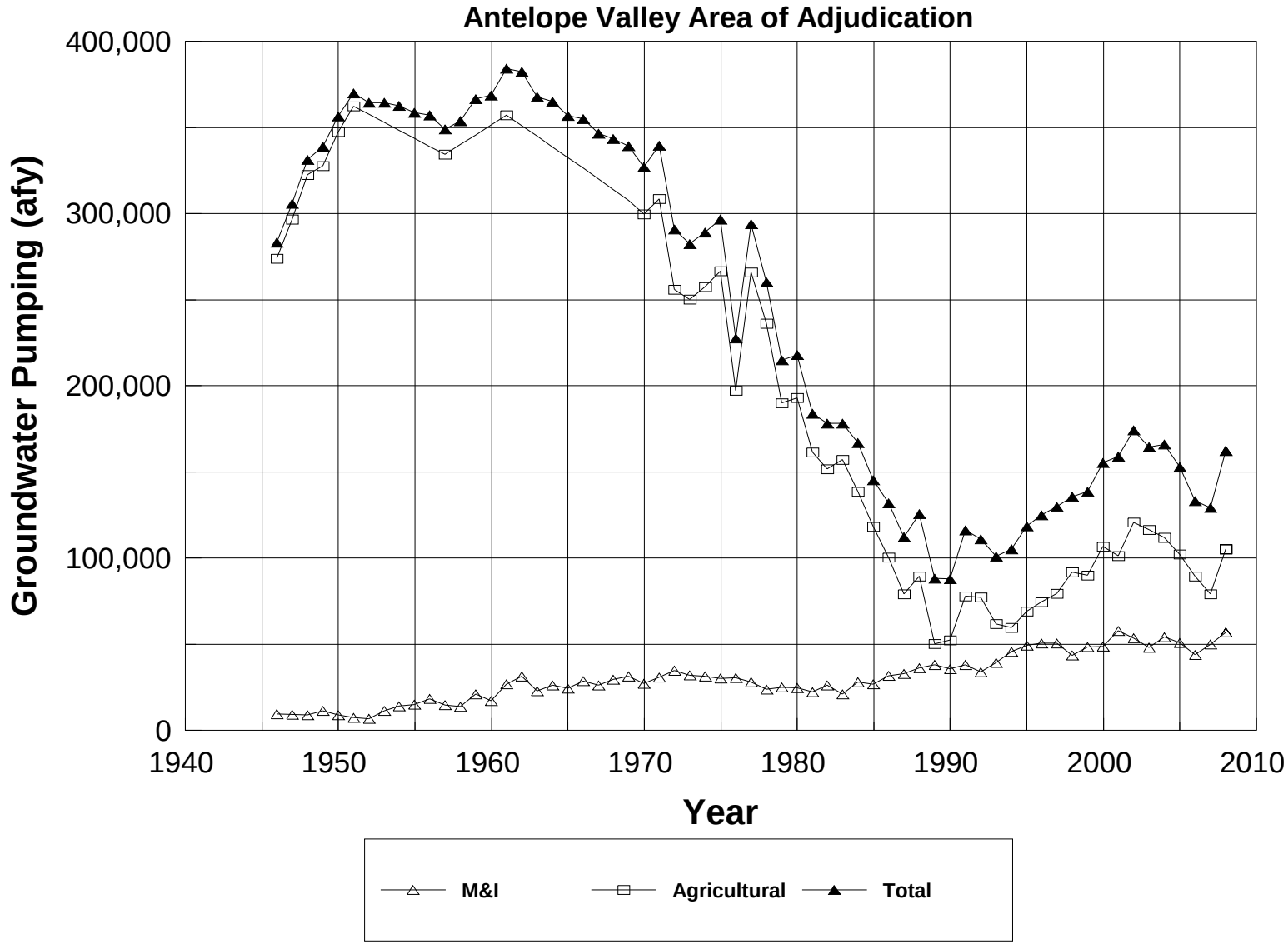

Figure WATER-4
Estimated Historical Groundwater Pumping
Alpine Solar Project

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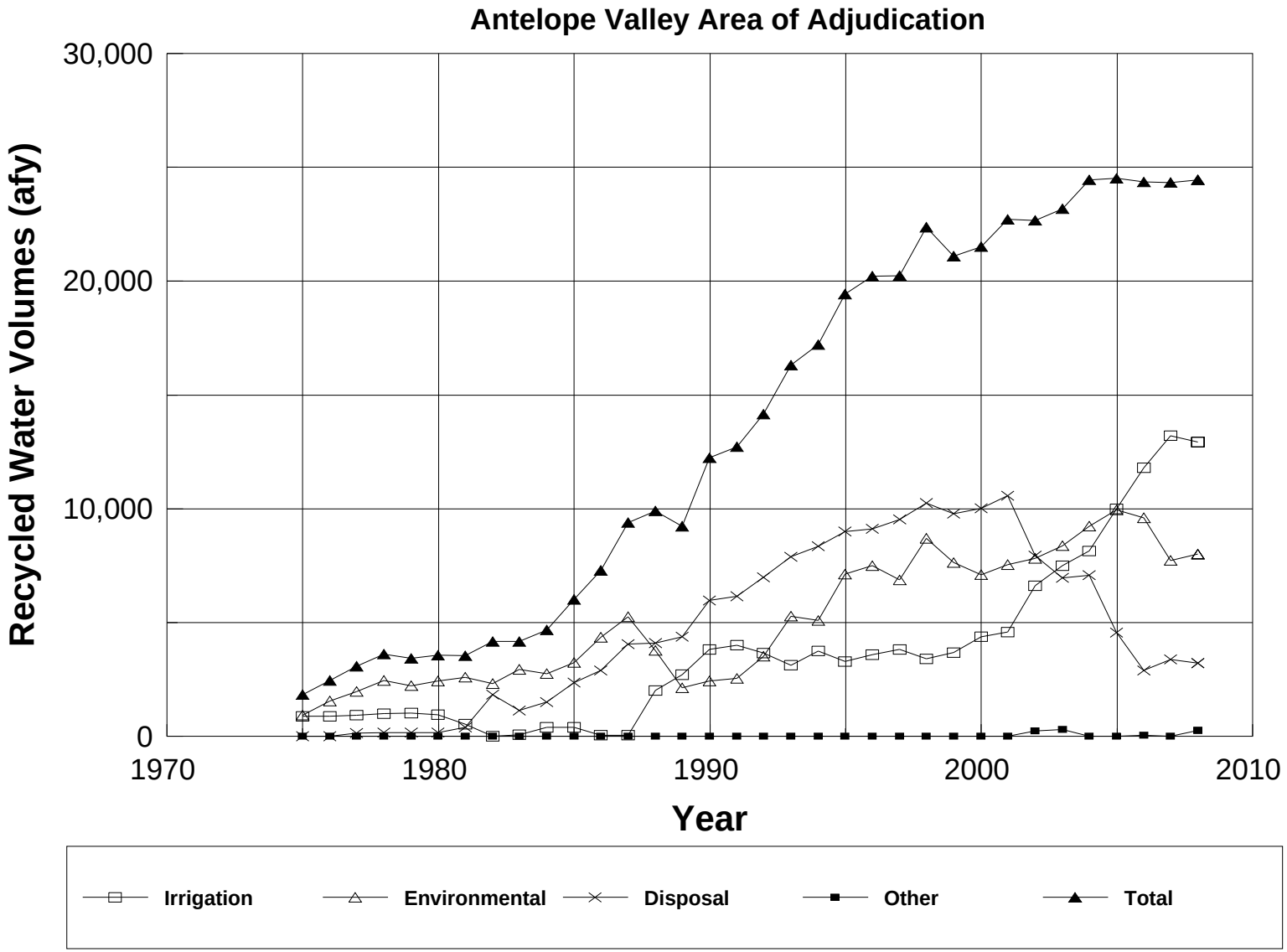

Figure WATER-5
Recycled Water Supply
Alpine Solar Project

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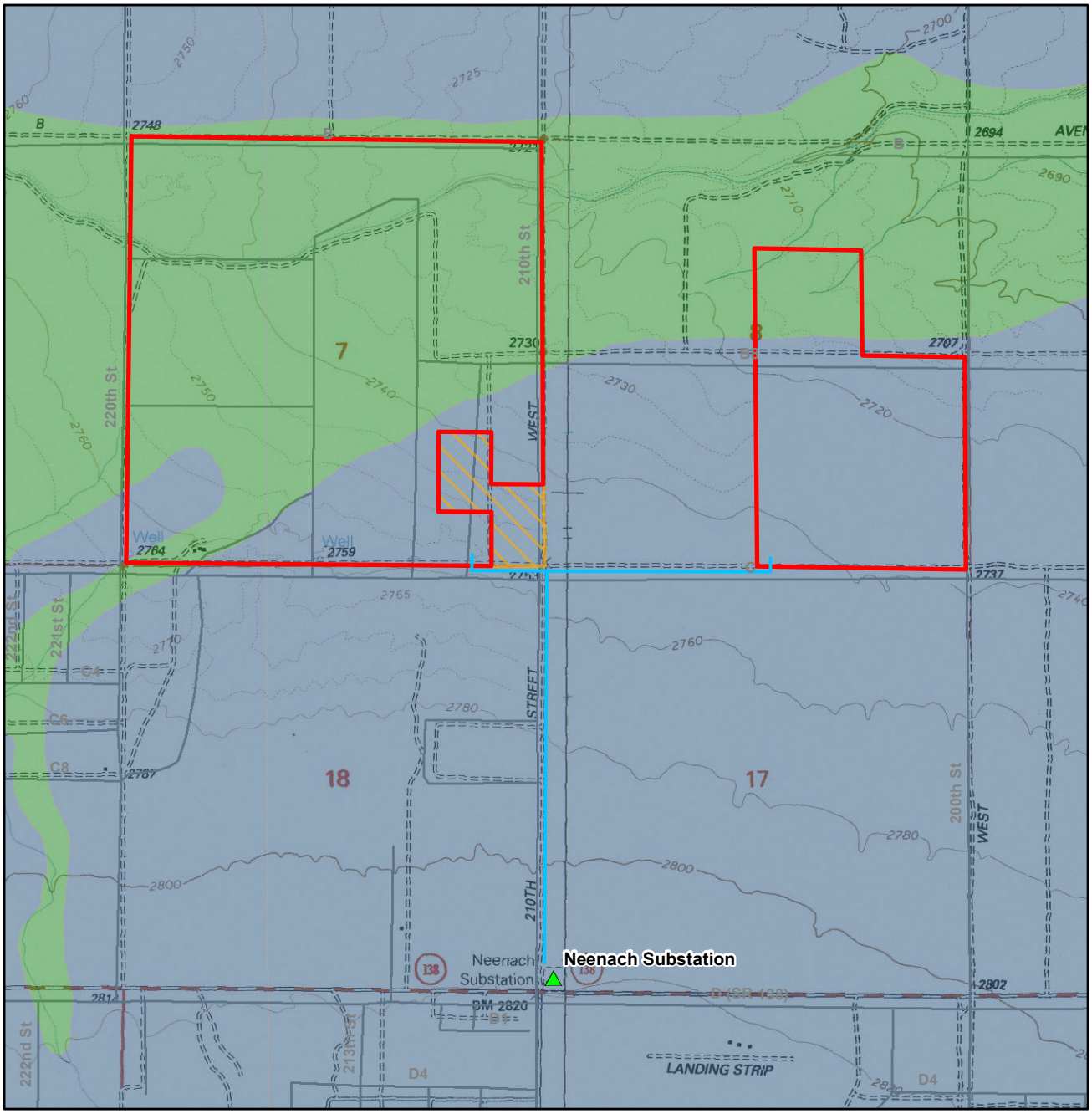


LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project

FEMA Flood Zone

- Zone A
- Zone X

Notes:
1. FEMA Flood Insurance Rate Maps, 1993

N

0 1,000 2,000
Feet

VICINITY MAP

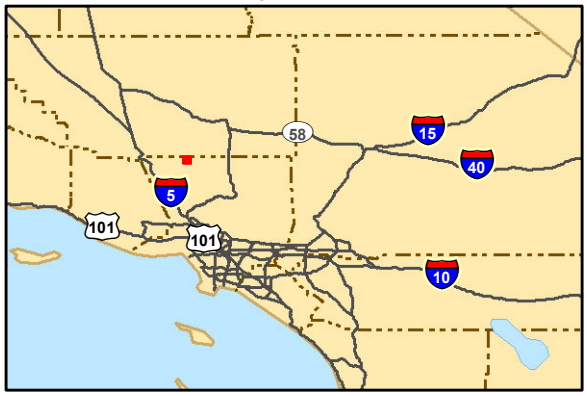
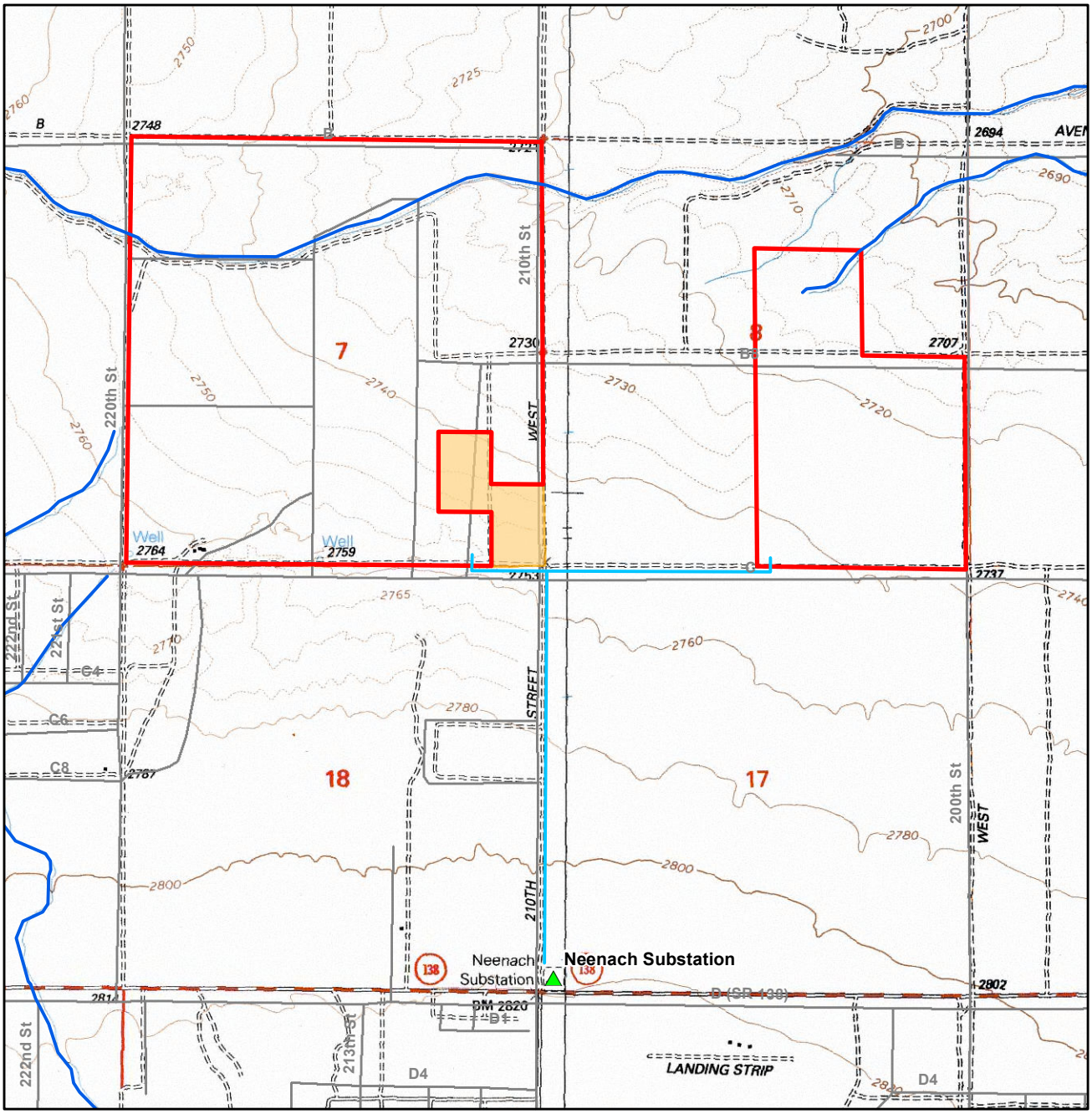


FIGURE FLOOD-1
FEMA Flood Zones
Alpine Solar Project



VICINITY MAP

LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Blue Line Stream

N

0 1,000 2,000

Feet

FIGURE FLOOD-2
USGS Topo Map with Major Drainage Course
Alpine Solar Project

11. LAND USE AND PLANNING

Environmental Setting

The Project surroundings are typical of the western Antelope Valley and are characterized by farmland, rural, scattered residences and small communities (e.g., Neenach, Antelope Acres), and undeveloped lands. The Project is located within the area considered a part of the Fairmont rural community. Land use at the Project site includes disturbed, undeveloped land with varying degrees of disturbance due to previous agricultural activities. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community with both native and non-native vegetation. Land adjacent to the Project site is primarily former farmland that is currently undeveloped. Active farmlands are located to the northwest and northeast, adjacent to the approved ASP. The Los Angeles County-designated Joshua Tree Woodland SEA #60 is located approximately 1,500 feet south of the Project site.

Pursuant to the Antelope Valley Areawide General Plan of the Los Angeles County General Plan, the Project site is designated Non Urban (N1) and is an Agricultural Opportunity Area (County of Los Angeles, 1986). Pursuant to Los Angeles County Code 22.24, the Project site is zoned Heavy Agricultural (A-2-5) (County of Los Angeles, 2010a) (see Figures LAND-1 and LAND-2).

The majority of lands immediately adjacent to the Project site are fields that were former farmland but have been recolonized by vegetation such as rabbitbrush and non-native invasive species. The exceptions to this are active farmlands adjacent to the northwestern and northeastern corners of the ASP Western Parcel and an SEA located approximately 0.50 mile south of the approved ASP. SEAs are ecologically important systems that are often integral to the preservation of threatened or endangered species and integral to the conservation of the County's biological diversity. Construction and operation of the Project would be integrated with the ASP. The Combined Project would be located adjacent to the Joshua Tree Woodland SEA system (see Figure BIOTA-1). Policy Statement 123 of the Antelope Valley Areawide General Plan mandates the preservation of SEAs as viable and natural a condition as possible, recognizing the resource values and the constraints imposed by competing priorities and objectives. Projects within a SEA must provide a biota report to be reviewed by the SEATAC, who makes an advisory recommendation to the decision-maker.

Recreational opportunities in the area include the Los Angeles County Desert Pines Wildlife Sanctuary, the Arthur B. Ripley Desert Woodland State Park, and the Antelope Valley Poppy Preserve State Park. These recreational facilities are located approximately 4 miles south, 3 miles south, and 7 miles southeast, respectively, of the Project site.

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒

The proposed Project would not physically divide an established community. The Project site is located in an area that consists of scattered rural residences, similar to rural Antelope Valley. The Project site is located approximately 3 miles east of the unincorporated community of Neenach, which has a population of approximately 800 (County of Los Angeles, 2010b). The proposed Project would be integrated with the ASP and would not divide the community nor would it change any public access routes to it; therefore, there would be no impact.

b) Be inconsistent with the plan designations of the subject property? Applicable plans include: the County General Plan, County specific plans, County local coastal plans, County area plans, County community/neighborhood plans, or Community Standards Districts. ☐ ☐ ☐ ☒

The proposed Project is consistent with the plan designation for the subject property. Pursuant to the Antelope Valley Plan, the Project site land use designation is N1, which may be characterized as low-density and rural. "Utility installations" are allowable uses of N1 areas, given compliance with the General Conditions for Development in Chapter D of the Antelope Valley Plan. Pursuant to the N1 designation, the Project would be considered a "non-residential use in a non-urban area."

The Antelope Valley Plan assigns the Agricultural Opportunity Area designation to areas such as the Project site that are large and are either active cropland or were recently active farmland (County of Los Angeles, 1986). The designation establishes agricultural activities as a priority land use over potentially incompatible adjacent development and discourages the premature conversion of these areas to other uses. Both the Los Angeles County General Plan and the Antelope Valley Plan specify that the County will evaluate non-agricultural use applications based on their potential impact to nearby agricultural operations. The proposed Project would not interfere with agricultural activity in surrounding areas. Construction and operation of the proposed Project would be integrated with the ASP. Development, construction, and staging areas required for the proposed Project would occur entirely within the site boundaries identified for the Project and/or the approved ASP. In addition, the proposed Project would not be located on active farmlands or on lands designated Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance. The proposed Project would not conflict with any applicable land use plans or associated policies. Therefore, there would be no impact.

c) Be inconsistent with the zoning designation of the subject property? ☐ ☐ ☐ ☒

The Project is consistent with existing zoning codes. Pursuant to Los Angeles County Code 22.24, the Project site is zoned Heavy Agricultural (A-2) (County of Los Angeles, 2010a). Electrical power generating plants are permitted in A-2 zones with a conditional use permit. No impact would occur.

d) Conflict with Hillside Management Criteria, SEA Conformance Criteria, or other applicable land use criteria? ☐ ☐ ☐ ☒

Hillside management criteria do not apply to the Project because the slope of the Project site is less than 25 percent. The Project site is not located within a designated SEA, so conformance criteria do not apply to the Project site. No HCPs or local community conservation plans that could contain applicable land use criteria, apply to the Project site. Therefore, no impact would occur.

References

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH#2010111082. November 8.

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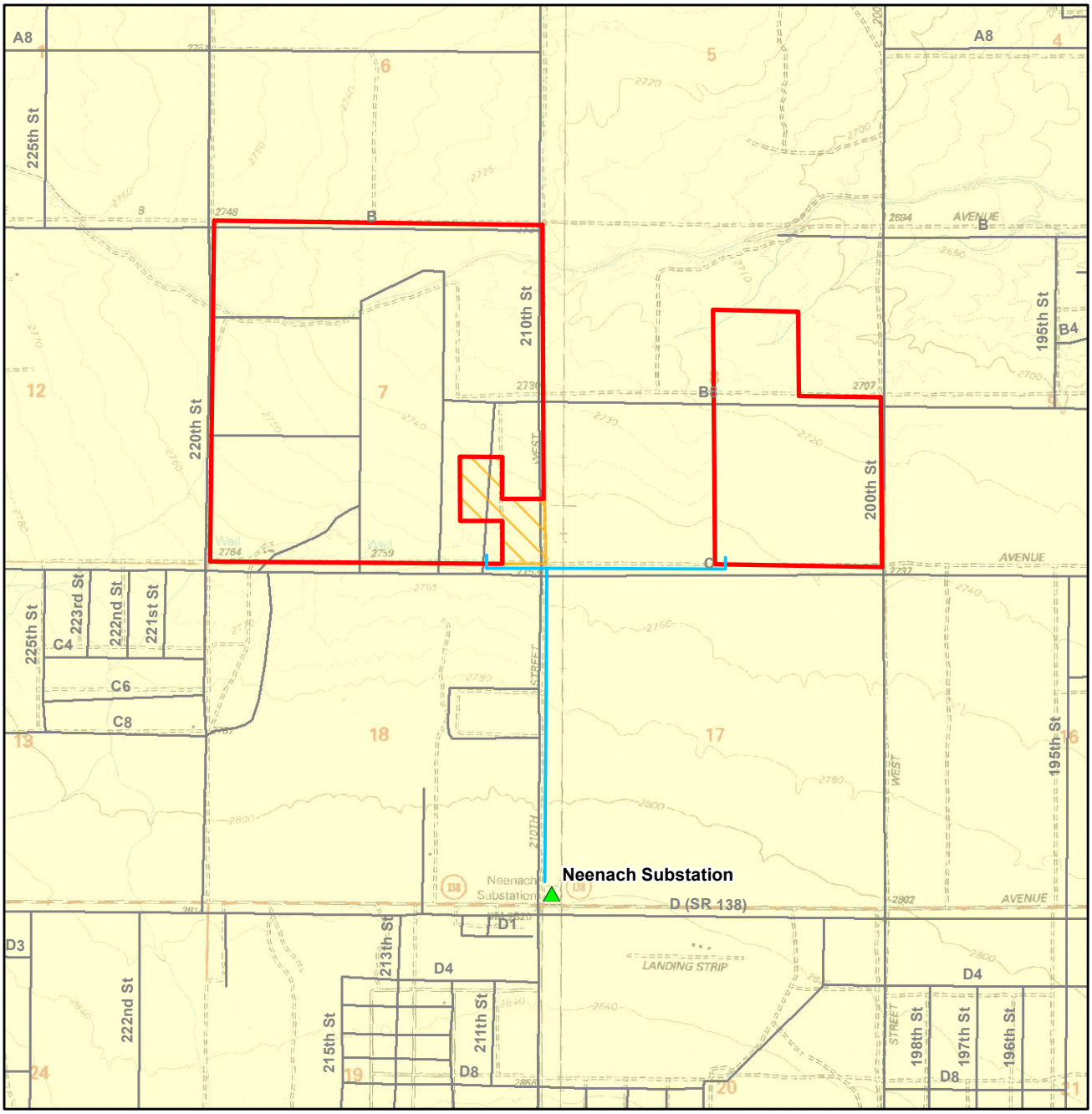
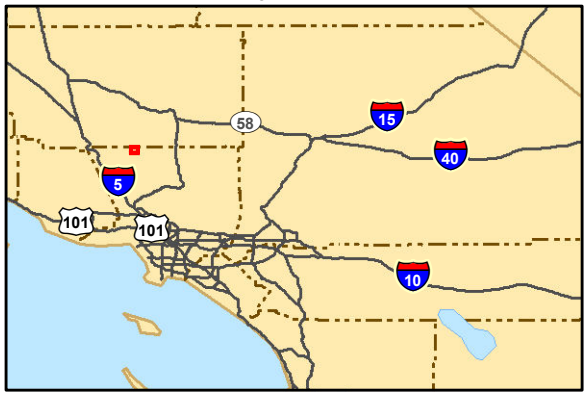


VICINITY MAP



LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project

Land Use Designation

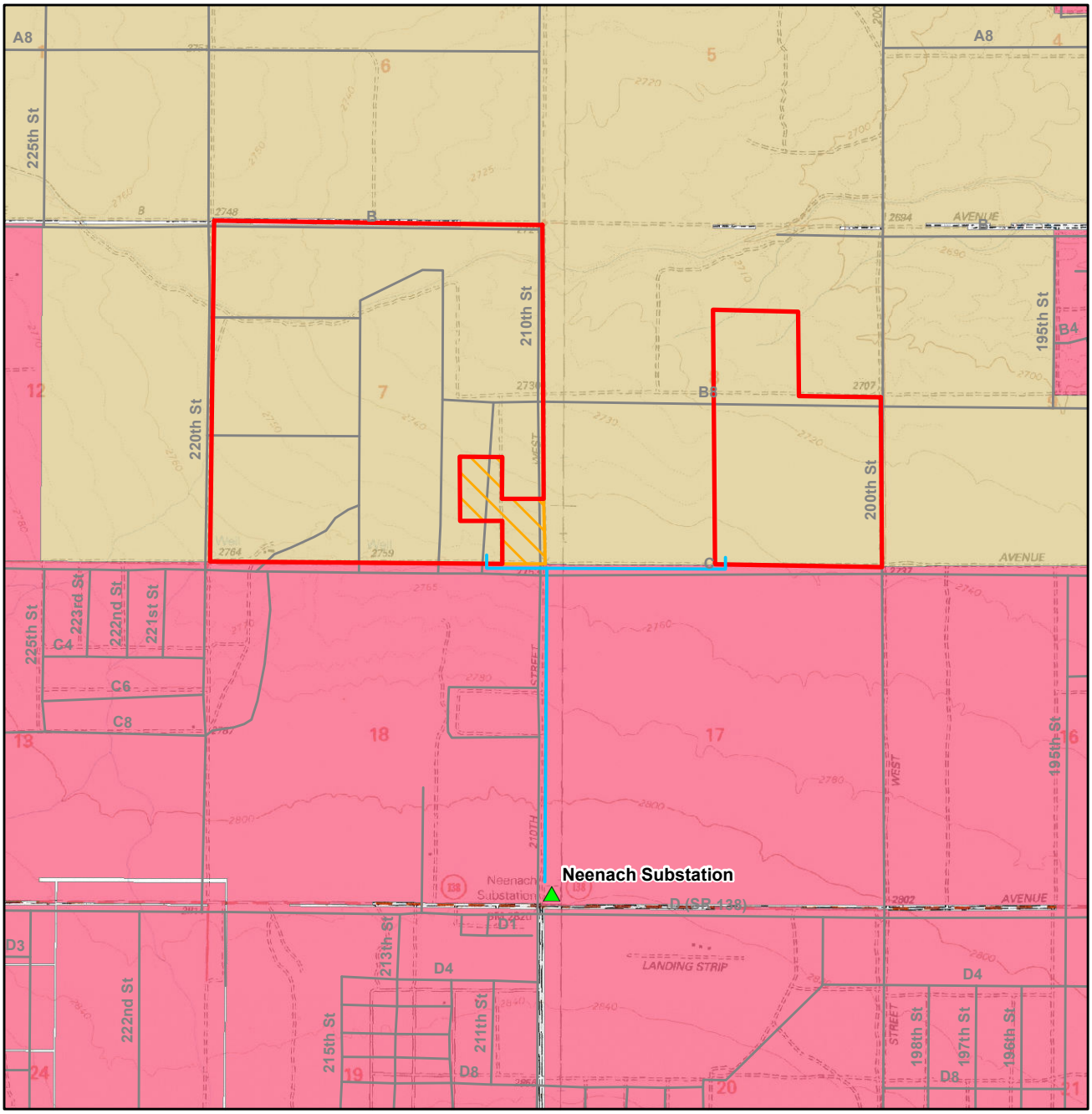
- N1 - Non-Urban 1 (0.5 du/ac)

Notes:
1. Los Angeles County General Plan, 2008.

N

0 1,250 2,500
Feet

FIGURE LAND-1
Project Site Land Use Designations
Alpine Solar Project



LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project

Zoning

- Heavy agriculture
- Light agriculture

Notes:
1. Los Angeles County Code, 2007.

N

0 1,250 2,500
Feet

VICINITY MAP

FIGURE LAND-2
Project Site Zoning
Alpine Solar Project

12. MINERAL RESOURCES

Environmental Setting

The Project site is located in the western portion of the Antelope Valley, a depressed basin in the western Mojave Desert composed of Quaternary alluvial deposits that extend several thousand feet in depth.

Based on the findings of GeoSoils Consultants, Inc. (2008), the Project site is underlain by Quaternary alluvium. The upper 5 feet of the site reportedly consisted of brown, silty, fine sands and gray-brown, sandy silts that are moist and loose to soft. Similar, but moderately dense to dense, materials were encountered greater than 5 feet below grade to the maximum depth explored during the geotechnical evaluation (51.5 feet below grade) (GeoSoils, 2008).

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

The 2009 Los Angeles County Department of Regional Planning Antelope Valley Area Plan Update Background Report (Los Angeles County Department of Regional Planning, 2009) includes a CGS SMARA Mineral Resource Zones map, which includes the Antelope Valley and surrounding areas. The Project area is not identified within a mineral resource zone on this map. There would be no impact.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The current Project area is not identified within a mineral resource zone within the County of Los Angeles General Plan (both current and draft versions) or within the Antelope Valley Areawide General Plan. The applicable general plans also do not identify the Project area as containing a locally important mineral resources recovery area. There would be no impact.

References

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH#2010111082. November 8.

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13. NOISE

Environmental Setting

Characteristics of Noise

Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or that interferes with communication, work, rest, recreation, and sleep. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound; dBA refers to the A-weighted sound level. Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound pressure levels of 1 dBA when exposed to steady single-frequency signals in the mid-frequency range. Outside such controlled conditions, the average healthy ear can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound pressure level. In addition, as noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6-dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise-sensitive receptor of concern. Other noise mechanisms also result in further attenuation of noise with distance from a source; these include atmospheric absorption, ground effects, full or partial enclosures, and blocking of the direct line-of-sight transmission of noise by terrain and/or berms or barriers.

Various methods exist to evaluate noise for certain time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The predominant rating scales for human communities in the State of California are the equivalent noise level (Leq), the community noise equivalent level (CNEL), and the day-night average sound level (Ldn). These noise descriptors are all stated in terms of dBA. The A-weighting network filters some of the sound in the lower and higher frequencies to duplicate human hearing response. The Leq is the sound pressure level equivalent to the average sound energy of time varying noise over a sample period. CNEL is the average, on an energy basis, of the hourly Leq over a 24-hour period, with a 5-dBA weighting factor applied to the hourly Leq for noise occurring from 7:00 p.m. to 10:00 p.m. (defined as evening hours) and a 10-dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as night hours). Ldn is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and Ldn are usually within one dBA of each other and are commonly considered to be exchangeable. The noise adjustments are added to the noise events occurring during the evening and night to reflect the greater sensitivity of people to noise during these periods.

Noise Standards

Construction and operation of the proposed Project is subject to policies and regulations contained within the following:

- County of Los Angeles General Plan
- Antelope Valley Areawide Plan of 1984
- Los Angeles County Code

Table NOISE-1 identifies exterior noise standards, Table NOISE-2 identifies interior noise standards, and Table NOISE-3 identifies the maximum allowable noise levels for stationary equipment.

TABLE NOISE-1
Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 p.m. to 7:00 a.m. (nighttime)	45
		7:00 a.m. to 10:00 p.m. (daytime)	50
III	Commercial properties	10:00 p.m. to 7:00 a.m. (nighttime)	55
		7:00 a.m. to 10:00 p.m. (daytime)	60
IV	Industrial properties	Anytime	70
Source: County of Los Angeles, 2010a. Los Angeles, California County Code.			

TABLE NOISE-2
Interior Noise Standards

Noise Zone	Designated Land Use	Time Interval	Allowable Interior Noise Level (dB)
All	Multifamily	10 p.m. to 7 a.m.	40
	Residential	7 a.m. to 10 p.m.	45
Source: County of Los Angeles, 2010a. Los Angeles, California County Code.			

TABLE NOISE-3
Maximum Noise Levels for Stationary Equipment

	Single-family Residential	Multi-family Residential	Semiresidential/ Commercial
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60dBA	65dBA	70dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50dBA	55dBA	60dBA
Source: County of Los Angeles, 2010a. Los Angeles, California County Code.			

Ambient Noise Environment

The primary noise source near the Project site is traffic on SR 138. Traffic counts, per the most recent data from the California Department of Transportation (Caltrans), are approximately 3,900 vehicles/day on

SR 138 near the Project site (Caltrans Traffic Data Branch, 2009). Aircraft activity from the General William J. Fox Airfield, the Rosamond Skypark, and particularly the Edwards Air Force Base (AFB) is also audible on the Project site. Overall, the existing noise environment is compatible with the County's noise standards for new industrial developments.

The closest known noise-sensitive land use includes a residential property on the corner of 192nd Street and West Avenue C at a distance of approximately 7,000 feet from the Project site.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project result in:				
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the County noise ordinance (Los Angeles County Code, Title 12, Chapter 12.08) or the General Plan Noise Element?	☐	☒	☐	☐

The following presents a discussion of the characteristics of noise, applicable noise regulations, and the existing ambient noise environment at the Project site. Both the short- and long-term impacts of the Project are evaluated relative to the existing noise environment.

Short-term Noise Impacts. Construction of the Project would be integrated with the ASP and would be associated with noise emissions consistent with that identified for the ASP. No additional noise emissions would occur. Two types of short-term noise impacts would occur during Combined Project construction. The first type would result from the increase in traffic flow on local streets associated with the transport of workers, equipment, and materials to and from the Combined Project site. Heavy equipment for construction is expected to be moved to the site and remain for the duration of the construction period. Construction of the Combined Project will result in an increase of approximately 240 round trips (representing the construction workforce trips) onto area roadways. In addition, a short-term intermittent increase in ambient noise levels would occur from trucks arriving at and departing from the Combined Project site during construction.

The second type of short-term noise impact is related to the noise generated by construction equipment operating on the Combined Project site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, has its own noise characteristics. These various sequential phases would change the character of noise generated; therefore, the noise levels would change as construction progresses. Despite the variety in type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table NOISE-4 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor.

Construction of the proposed Project would be integrated with the ASP. The type, purpose, and duration of equipment that will be used for the Project is the same as that required for the ASP.

TABLE NOISE-4
Typical Construction Equipment Maximum Noise Levels

Type of Equipment	Range of Maximum Sound Levels (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers	81 to 96	93
Rock Drills	83 to 99	96
Jackhammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Dozers	77 to 90	85
Tractors	77 to 82	80
Front-end Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86
Source: Bolt, Beranek & Newman, 1987.		

Construction of the Project will require the use of earthmovers such as scrapers, loaders and graders, water trucks, and pickup trucks. The typical maximum noise level generated by each scraper on the Project site is assumed to be 87 dBA maximum noise level (L_{max}) at 50 feet from the operating earthmover. The maximum noise level generated by hydraulic backhoes is approximately 86 dBA L_{max} at 50 feet; the maximum noise level generated by water and other trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles.

Pile driving would be the selected method to install the foundations of the solar PV modules. Vertical hydraulic vibratory pile drivers would be the most likely pile driver model selected for construction. The noise emissions for these drivers are significantly lower than noise emissions from other pile driving equipment. Typical pile driver noise is 95 to 100 dBA at a distance of 50 feet. Pile drivers are classified as impact devices in the Los Angeles County Noise Ordinance; the applicable standard is therefore 55 dBA. Noise modeling analysis obtained from the AV Solar Ranch One EIR (County of Los Angeles, 2010b) indicates the minimum distance from pile driving operations to a noise-sensitive receiver needed to comply with the 55-dBA standard is 3,000 feet. The closest noise-sensitive land use includes a residential property on the corner of 192nd Street and West Avenue C at a distance of approximately 7,000 feet from the Project site.

Because of the short-term nature of this construction-related impact, implementation of Mitigation Measure NOISE-1 would reduce this impact to a less than significant level, in accordance with County standards limiting construction noise.

Long-term Noise Impacts. As outlined in the ambient noise environment discussion, the existing noise environment is compatible with the County's standards for industrial developments, such as a solar PV facility. Therefore, existing noise sources would be considered less than significant and are not further analyzed. As mentioned in the Characteristics of Noise discussion, a doubling of sound energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. Implementation of the Project would not result in a doubling of vehicle trips on roadways in the Project vicinity. Operation of the Project would be integrated with the ASP and only one to two permanent staff would be required to operate the facility for the Combined Project. Therefore, compared with the existing traffic noise levels in the Project vicinity, implementation of the Project would not result in a perceptible change in traffic noise on roadways near the Project site. Therefore, Project-related traffic noise impacts would be less than significant.

Stationary Noise Impacts. Operation of the proposed Project would be integrated with the ASP. Stationary noise attributable to the Project would be negligible and the long-term operations of the Combined Project should not result in substantial increases in existing noise levels at locations surrounding the Project site. The closest noise-sensitive land use includes a residential property located at the intersection of 192nd Street and West Avenue C that is approximately 7,000 feet from the Project site. At this distance, the noise generated by stationary noise sources associated with a solar PV generating facility should not result in a perceptible change in ambient noise levels at this noise-sensitive receptor. Audible increases in noise levels generally refer to a change of 3 dBA or greater, since this level has been found to be barely perceptible in exterior environments. The Project would not result in substantial audible increases in noise; therefore, development of the Project would result in a less than significant stationary noise impact on existing land uses in the Project vicinity.

After completion of construction activities, no substantial permanent increase in ambient noise levels in the Project vicinity would occur. The Project would not generate enough traffic to create a perceptible change (at least 3 dBA) in traffic noise near the Project site. Project operational noise would be minimal at offsite locations, and impacts would be less than significant.

b) Exposure of sensitive receptors (e.g., schools, hospitals, senior citizen facilities) to excessive noise levels?	☐	☐	☐	☒

The Project is a solar PV facility and, therefore, is not considered a sensitive use. No sensitive uses (school, hospital, senior citizen facility) are nearby; the closest sensitive receptor is a residence approximately 7,000 feet from the exterior perimeter of the Project site. No impact would occur.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, including noise from parking areas?	☐	☐	☒	☐

As previously discussed, after completion of construction activities, no substantial permanent increase in ambient noise levels in the Project vicinity would occur. The Project would not generate enough traffic to create a perceptible change (at least 3 dBA) in traffic noise near the Project site. Project operational noise would be minimal at offsite locations .Sufficient parking is available on the ASP site for construction and operation of the Combined Project and no additional parking areas or structures would be required for the Project. Therefore, impacts would be less than significant.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, including noise from amplified sound systems?	☐	☐	☒	☐

Please refer to the discussion in c) above.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

The Project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The General William J. Fox Airfield is located approximately 14 miles east of the Project site. The Rosamond Skypark is located approximately 15 miles northeast of the Project site, and Edwards AFB is located approximately 20 miles east of the Project site. Given the distance of the nearest public airports, the construction workers and occasional operations workers would not be exposed to excessive noise levels as a result of airplanes landing and taking off. Impacts would be less than significant.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

There is a private "landing strip" noted on the USGS Quad sheet southeast of the Neenach Substation. However, it is unclear from Google Earth aerial images (Google Earth, 2006) and field visits by CH2M HILL staff in May and June 2010 whether this landing strip is active. Given the historical agricultural use of the area, it is likely that this landing strip was used for crop dusting or other related agricultural purposes. The nearest known privately owned airport is the Skyottee Ranch Airport, which is located approximately 5 miles to the northeast of the Project area. The construction workers and occasional operations workers would not be exposed to excessive noise levels as a result of small airplanes landing and taking off. Impacts would be less than significant.

Mitigation and Residual Impact

Potential impacts related to noise would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances and (2) by implementing the following mitigation measure:

NOISE-1. Construction equipment and vehicles will be fitted with efficient and well-maintained mufflers to reduce noise emission levels. In addition, the Project construction equipment and vehicles will be maintained according to the manufacturers' instructions and recommendations.

Based on implementation of the above mitigation measure, the potential impacts associated with noise would be reduced to a less than significant level.

References

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County of Los Angeles. 2010. Draft Environmental Impact Report, AV Solar Ranch One Project (AVSREIR). June.

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14. POPULATION AND HOUSING

Environmental Setting

The Project site is located in the western Antelope Valley, which is characterized by scattered rural residences, and is 3 miles east of the community of Neenach, which has a population of approximately 800. However, the Project site lies within commuting distance of the largest Antelope Valley cities: Lancaster and Palmdale. The average commuting time in Los Angeles County is approximately 30 minutes (U.S. Census Bureau, 2000).

Lancaster is located approximately 20 miles southeast of the Project site and had an estimated population of 140,804 in 2006 (U.S. Census Bureau, 2010a). Palmdale is located approximately 25 miles southeast of the Project site and had an estimated population of 138,790 in 2006 (U.S. Census Bureau, 2010b). Rosamond, in Kern County, is located approximately 20 miles northeast of the Project site and had a population of 14,349 as of the 2000 Census (U.S. Census Bureau, 2000).

Construction of the proposed Project will be integrated with the construction of the ASP and would last from 12 to 18 months. On average, 200 construction workers (with a maximum of 240) would be needed per day. The construction workers would be hired from the local labor pool, which would include Lancaster, Palmdale, and Rosamond. Construction workers account for 6 to 7 percent of the local workforce in the Antelope Valley (U.S. Census Bureau, 2000).

The North Antelope Valley is an area defined by the U.S. Census Bureau that corresponds to the northern part of Los Angeles County. It includes the Project site and the city of Lancaster, but does not include Palmdale in Los Angeles County or Rosamond in Kern County. In the North Antelope Valley area, 3,890 people were in the construction industry as of the 2000 Census (U.S. Census Bureau, 2000). There were 2,955 people in the construction industry in Palmdale and 354 in Rosamond as of the 2000 Census (U.S. Census Bureau, 2000). A sufficient number of these local workers could be available for project construction due to the high unemployment rate in Los Angeles County (estimated at 12 percent (EDD, 2010).

A substantial amount of vacant housing exists within commuting distance of the Project site. As of the 2000 Census, in the North Antelope Valley area 53,670 housing units existed; of these, 4,713 were vacant, of which 1,654 were for rent. In Palmdale 37,096 housing units existed; of these, 2,811 were vacant, of which 1,059 were for rent. In Rosamond, 5,597 housing units existed; of these, 609 were vacant, of which 323 were for rent (U.S. Census Bureau, 2000).

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

Construction and operation of the proposed Project would be integrated with the ASP. The Project would not directly or indirectly induce substantial population growth. The Project does not include infrastructure improvements that would result in new development areas that would increase population; it does not include any new residential development; and it would not provide a significant number of permanent jobs

during its operation. Generation of electricity would allow the County's electrical service provider to continue to accommodate existing population as well as growth planned by Los Angeles County.

Further, a significant relocation of construction workforce is unlikely given the availability of a sufficient construction workforce within commuting distance and the current high unemployment rate in Los Angeles County. As of the 2000 Census, 3,890 construction workers were in the North Antelope Valley area of Los Angeles County. Another 2,955 construction workers were in the city of Palmdale, and 352 were in Rosamond (U.S. Census Bureau, 2000). During Project operation, one to two maintenance personnel would be onsite daily, thus any increase in population related to permanent employment would be negligible. Therefore, impacts would be less than significant.

b) Cumulatively exceed official regional or local population projections? ☐ ☐ ☒ ☐

As described in a) above, Project construction and operation would not result in population growth nor would Project construction impact regional or local population projections. Impacts would be less than significant.

c) Displace existing housing, especially affordable housing? ☐ ☐ ☐ ☒

The Project would not physically displace existing housing units because no housing exists at the Project site. The Project surroundings consist of scattered rural residences, none of which would have to be relocated as a result of the Project. Therefore, no replacement housing would need to be constructed.

The Project would not result in the displacement of people since no one currently lives on-site. In addition, sufficient local labor exists to comprise the construction workforce. If additional construction workforce were needed from outside of the region, sufficient vacant housing exists to accommodate these potential workers. As of the 2000 Census, Lancaster had 4,713vacant housing units, of which 1,654 were available for rent. Palmdale had 2,811 vacant units, 1,059 of which were available for rent and Rosamond had 609 vacant units, 323 of which were available for rent. Project construction and operation would not displace existing housing. Therefore, there would be no impact.

d) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? ☐ ☐ ☐ ☒

As described in c) above, the Project is proposed in a rural area of the Antelope Valley and would not displace any people. The Project site contains no inhabited residential structures. Project construction and operation would not displace people or housing. Therefore, there would be no impact.

References

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U.S. Census Bureau. 2010b. State and County Quickfacts. Palmdale, California. Last revised Thursday, 22 Apr 2010. http://quickfacts.census.gov/qfd/states/06/0655156.html.

15. PUBLIC SERVICES

Environmental Setting

Fire

The LACFD serves the Project site from Station No. 112, approximately 5 miles east of the Project site, located at 8812 West Avenue E-8, Lancaster, CA 93536 (CFD, 2010). The response time from this station to the ASP is approximately 18 minutes and the Project is located immediately adjacent to the ASP Western Parcel. Therefore, response time to the Project is anticipated to be approximately 18 minutes. This station is within the North Department Region, Division V, in Battalion 11. The nearest battalion headquarters is No. 33 at 44947 Date Avenue, Lancaster, CA 93534, approximately 21 miles east of the Project (LFD, 2010) (see Figure FIRE-1).

Sheriff

The Los Angeles County Sheriff's Department (LACSD) provides police protection and public safety services for the County. In the Project area, the Lancaster Patrol Station personnel provide law enforcement services. The Project is located within the Sheriff's Department designated Field Operations Region I that includes the unincorporated areas of the county. The services provided by eight of the Region I patrol stations are basic police services including traffic control, neighborhood policing, emergency services, and crime prevention (http://sheriff.lacounty.gov/wps/portal/lasd, 2010). The County Sheriff would respond to the Project from the Lancaster patrol station approximately 21 miles southeast of the Project site, at 501 West Lancaster Boulevard, Lancaster, CA 93534 (LACSD, 2010). This substation provides services for over 190,000 residents in over 600 square miles in the northern Los Angeles County unincorporated area. There are approximately 189 sworn personnel and 74 civilian personnel assigned to this station (LACSD, 2010). Response time from this station to the Project would be approximately 33 minutes. In some cases, the Palmdale patrol station (approximately 35 miles southeast of the Project site at 750 E. Avenue Q, Palmdale, CA 93550) may respond to emergencies and provide support services to the Lancaster station (LACSD, 2010). The response time from the Palmdale station to the Project is approximately 40 minutes.

Schools

The Project area is served by the Antelope Valley Union High School District (AVUHSD) and Westside Union School District (WUSD). The AVUHSD includes the Project area and maintains 11 high schools and 1 adult school (AVUHSD, 2010). The WUSD includes the Project area and maintains 12 elementary and middle schools (WUSD, 2010).

The WUSD's educational facility closest to the Project site is the Del Sur Senior Elementary School, located approximately 15 miles southeast. Sundown Elementary School of the WUSD and Desert Winds High School of the AVUHSD are approximately 20 and 26 miles, respectively, southeast of the Project site.

Parks

Two major state parks (Arthur B. Ripley Woodland and Antelope Poppy Preserve) are within 10 miles of the Project site. The 560-acre Arthur B. Ripley Desert Woodland State Park is located approximately 3 miles south of the Project site. The Arthur B. Ripley Park offers visitors a self-guided interpretive trail in Joshua tree habitat. In the spring, the park also offers wildflower displays. The Poppy Reserve is located on the Antelope Buttes approximately 7 miles southeast of the Project site. The Poppy Reserve is open year round but attracts most visitors from mid-February through mid-May for its wildflower displays. The Poppy Reserve has several miles of trails, an interpretive center, and five designated vista points.

Libraries

The library closest to the Project site is the Lancaster Public Library, located in Lancaster approximately 22 miles southeast of the Project site. Quartz Hill Public Library is located approximately 32 miles southeast of the Project site (Google Earth, 2010).

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project create capacity or service level problems, or result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐

Construction Impacts

Construction of the proposed Project would be integrated with the ASP and would consist of an average of 200 laborers, electricians, supervisory personnel, support personnel, and construction management personnel (maximum 240). Because the Project would have a relatively short construction period (approximately 12 to 18 months), construction workers who may relocate for a short work assignment are not expected to relocate their families. Construction of the Project would, therefore, not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. Project construction would therefore have a less than significant impact on fire protection services and their staffing or response times.

Operational Impacts

Operation of the proposed Project would be integrated with the ASP. One to two full-time staff would be present onsite. Other staff would visit the site only for security, maintenance, or system monitoring visits. Therefore, no significant population change is expected as a result of the Project's operation. The Project would, therefore, have a less than significant impact on fire protection services.

In addition, the PV modules and ancillary equipment represent a negligible increase in fire potential. Therefore, no increase in firefighting staff or increase in demand for firefighting services is expected. The Project would not cause significant adverse impacts to the response times of the LACFD. Communication equipment would be available onsite at all times to contact agencies if emergencies arise.

Operation of the Project would include the following Applicant-proposed project features that would increase fire protection and security services or facilities, as detailed below:

- During construction, fire extinguishers would be available onsite and personnel would be trained in their proper use.
- Onsite fire protection systems for Project operation would be provided to limit the potential for injury, loss of life, loss of property, and plant down-time from a fire or an explosion. Fire protection

infrastructure would be installed in compliance with LACFD requirements. The applicant would have a fire prevention plan approved pursuant to applicable Los Angeles County regulations. The systems that would be included in the facility would consist of fire water storage tanks, pumping systems, and suppression systems. Site personnel would be trained to effectively deal with emergency situations, and local fire authorities would be provided with the facility layout, material hazards, and evacuation routes.

- An Emergency Response and Waste Contingency Manual addressing the Combined Project would be prepared and updated (and kept within the ASP's O&M building) to ensure safe and effective firefighting measures onsite during the Project's operation.

- A Weed Abatement Plan would be developed and implemented to address the Combined Project to prevent excessive growth of combustible natural materials on the Project site during operation.

The LACFD recommends implementation of Land Development Unit standards, as noted in their comment letter to the ASP, dated September 20, 2010. Additionally, per the Health and Hazardous Materials Division recommendation to the ASP, a Phase I Environmental Site Assessment (ESA) was prepared for the ASP, which included the Project site. The ESA addressed potential soil and groundwater contamination and determined that no further site assessment, soil mitigation or management strategies are necessary.

Therefore, the Project would have a less than significant impact on emergency fire services.

Sheriff protection? ☐ ☐ ☒ ☐

As described in the discussion of fire protection above, construction and operation of the Project would not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. Therefore, the Project would have a less than significant impact on police protection services and their staffing or response times. In addition, the PV modules and ancillary equipment represent a negligible increase in fire potential. Therefore, no increase in police staff or increase in demand for police services is expected. The Project would not cause significant adverse impacts to the response times of the LACSD. Communication equipment would be available onsite at all times to contact agencies if emergencies arise.

Operation of the Project would include the Applicant-proposed project features that would increase security services or facilities, as detailed below:

- Security systems during Project operation would include a chain-link security fence (the fencing will be integrated with the ASP fenced area). Each fenced area would include at least two gates, and a secured, controlled main access gate would be located at the entrance of each area. The fence would be equipped with a perimeter detection system to monitor any intrusion into the property.

Therefore, the Project would have a less than significant impact on sheriff services.

Schools? ☐ ☐ ☒ ☐

As previously discussed, construction and operation of the Project would not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. Therefore, no influx of families with school-aged children into the area would occur. Significant growth in the communities near the Project site is not expected. As a result, the Project would have a less than significant impact on schools in the area.

Parks? ☐ ☐ ☒ ☐

As previously discussed, construction and operation of the Project would not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. Sufficient local labor is available to work on the Project and therefore it is unlikely that a substantial number of workers would come from outside the area for construction of the facility. Operation would only require one to two staff, having a negligible effect. Two major state parks (Arthur B. Ripley Woodland and Antelope Poppy Preserve) are within 10 miles of the Project site. These facilities would provide adequate recreational opportunities for the construction and operations work force. Therefore, impacts would be less than significant.

Libraries? ☐ ☐ ☒ ☐

As previously discussed, construction and operation of the Project would not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. The two nearest libraries to the Project site (Lancaster Public Library and Quartz Hill Public Library)located approximately 22 and 32 miles away, respectively, would provide adequate library/educational opportunities for the construction and operations work force. Therefore, impacts would be less than significant.

Other public facilities? ☐ ☐ ☒ ☐

Construction and operation activities at the Project site would be expected to result in less than significant impacts to maintain acceptable levels of service, service ratios, response times, and performance objectives. The proposed Project construction and operation activities will be integrated with the ASP, and therefore would not be expected to require new or physically altered roads, fire facilities, or sheriff facilities. The proposed Project does not involve residential development, growth-inducing impacts, or recreational uses that would affect schools, parks, libraries. As a result, Project construction and operation impacts to other public facilities would be less than significant.

References

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH # 2010111082. November 8.

County of Los Angeles Fire Department (CFD). Website: http://fire.lacounty.gov/default.asp Accessed July 23, 2010.

City of Lancaster, Fire Department (LFD) Website: http://www.cityoflancasterca.org/index.aspx?page=891. Accessed July 23, 2010.

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Los Angeles County Sheriff's Department (LACSD). Website http://sheriff.lacounty.gov/wps/portal/lasd

16. RECREATION

Environmental Setting

The Project site is located in a rural and sparsely populated area of the Antelope Valley in the northern portion of Los Angeles County. Recreational facilities in the Project vicinity include regional, state, and national parks and trails such as the Antelope Valley California Poppy Reserve (Poppy Reserve), Arthur B. Ripley Desert Woodland State Park, Los Angeles County Desert Pines Wildlife Sanctuary, and the Pacific Crest National Scenic Trail (PCT). No neighborhood parks are near the Project.

The Poppy Reserve is located on the Antelope Buttes approximately 7 miles southeast of the Project site. The Poppy Reserve is open year round but attracts most visitors from mid-February through mid-May for its wildflower displays. The Poppy Reserve has several miles of trails, an interpretive center, and five designated vista points.

The 560-acre Arthur B. Ripley Desert Woodland State Park is located approximately 3 miles south of the Project site. The Arthur B. Ripley Park offers visitors a self-guided interpretive trail in Joshua tree habitat. In the spring, the park also offers wildflower displays.

Los Angeles County Desert Pines Wildlife Sanctuary, approximately 4 miles south of the Project site, is also open to the public but has no established trails.

The PCT is a hiking trail that crosses the Antelope Valley near the Project site. The PCT is a national trail that traverses the west coast of the United States from Canada to Mexico, crossing California, Oregon, and Washington. The PCT descends from the Tehachapi Mountain Range north-northeast of the Project site, crosses the Antelope Valley, and ascends into the San Gabriel Mountain Range southwest of the Project site. At its closest points, the PCT is approximately 7 miles south, 4.6 miles west, and 4.1 miles north of the Project site.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐

As previously discussed in Section 14. Population and Housing, construction and operation of the Project would not cause significant population changes in the communities near the Project site, nor would it create a demand for additional housing. Sufficient local labor is available to work on the Project and therefore it is unlikely that a substantial number of workers would come from outside the area for construction of the facility. Operation would only require one to two staff, having a negligible effect. Two major state parks (Arthur B. Ripley Woodland and Antelope Poppy Preserve) are within 10 miles of the Project site. Existing facilities would provide adequate recreational opportunities for the construction and operations work force and the Project would not be expected to result in substantial physical deterioration of these recreational facilities. Impacts would be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? ☐ ☐ ☐ ☒

The Project does not involve the construction or expansion of recreational facilities. Therefore, no impacts would occur.

c) Is the project consistent with the Department of Parks and Recreation Strategic Asset Management Plan for 2020 (SAMP) and the County General Plan standards for the provision of parkland? ☐ ☐ ☐ ☒

The proposed Project is consistent with the plan designation and existing zoning code for the subject property. Pursuant to the Antelope Valley Plan, the Project site land use designation is N1, which may be characterized as low-density and rural. "Utility installations" are allowable uses of N1 areas, given compliance with the General Conditions for Development in Chapter D of the Antelope Valley Plan. Pursuant to the N1 designation, the Project would be considered a "non-residential use in a non-urban area." Pursuant to Los Angeles County Code 22.24, the Project site is zoned Heavy Agricultural (A-2) (County of Los Angeles, 2010a). Electrical power generating plants are permitted in A-2 zones with a conditional use permit.

The Project does not involve the construction or expansion of recreational facilities and is not located on County-designated lands for parks, recreational facilities, or parklands. Therefore, consistency with the SAMP and General Plan standards for the provision of parkland is not applicable, and no impacts would occur.

d) Would the project interfere with regional open space connectivity? ☐ ☐ ☒ ☐

The Project is not located in an undeveloped or undisturbed area that contains unique open space features. Project surroundings are typical of the western Antelope Valley. The Project is located in an area that has been primarily used for agriculture. Land use at the Project site includes disturbed, undeveloped land with varying degrees of disturbance due to previous agricultural activities. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community with both native and non-native vegetation. Land adjacent to the Project site is primarily former farmland that is currently undeveloped. Given the surrounding land uses and disturbance at the Project site, it is not anticipated that the Project would interfere with regional open space connectivity. Therefore, impacts would be less than significant.

References

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH#2010111082. November 8.

County of Los Angeles. 2010. Preliminary Draft of the Antelope Valley Area Plan Update. Available at: http://planning.lacounty.gov/tnc

County of Los Angeles. 2008. Conservation and Open Space Element. Draft General Plan.

17. TRANSPORTATION/TRAFFIC

Environmental Setting

The traffic analysis study area includes the Project's immediate vicinity and the surrounding local and regional circulation system. These areas could be affected by traffic generated during construction and operation. The Project site is located on SR 138 between I-5 to the west and SR 14 to the east. Figure TRAFFIC-1 shows the roadways in the region. A description of the existing transportation system and existing Levels of Service (LOS) is provided below.

North-South Facilities

I-5. This is a major north-south interstate freeway through Los Angeles County and runs the length of California, extending from San Diego County toward the states of Oregon and Washington. I-5 is located 20 miles west of the Project site and provides four mainline lanes in each direction with wide shoulders and a center median.

SR 14. The Antelope Valley (AV) Freeway, or SR 14, is a north-south regional roadway approximately 20 miles east of the Project site. SR 14 provides regional access from the cities of Lancaster and Palmdale and from unincorporated areas within the Antelope Valley. Near the Project site, the freeway generally provides two lanes in each direction, widening to three lanes in each direction with high occupancy vehicle (HOV) lanes to the south toward I-5. Full ramp access is provided at the SR 14 and SR 138 interchange.

SR 138. This is a two-lane, east-west roadway that provides access to the Project site via 210th Street West. Full ramp access is provided at both the I-5 and SR 14 interchanges. Caltrans has tentative plans to expand SR 138, subject to funding, final design, and environmental review/ approvals. As required by Los Angeles County and Caltrans, for SR 138 between I-5 and SR 14, and consistent with County roadway width requirements, the AV Solar Ranch One project will be required to dedicate land adjacent to the AV Solar Ranch One project site to provide a total right-of-way width of 200 feet. The dedicated land would be approximately 3 miles east of the Project site.

210th Street West. This is a north-south local roadway providing primary access to the Project site off SR 138. This street is currently a dirt road.

220th Street West. This is a north-south local roadway that provides access to the approved ASP site. This street is paved with one lane provided in each direction.

Level of Service Descriptions

LOS is an indicator of operating conditions on a roadway or at an intersection. It is defined in categories from A to F, with A representing the best traffic flow conditions and F representing poor conditions. LOS A indicates free-flowing traffic; LOS F indicates substantial congestion with stop-and-go traffic and long delays at intersections. Los Angeles County seeks to maintain LOS C or D at intersections during peak hours. Caltrans considers LOS C to LOS D acceptable to the extent feasible.

Traffic counts, per Caltrans' most recent data, are approximately 69,000 vehicles per day on I-5 near the SR 138 interchange; 35,000 vehicles per day on SR 14 near the SR 138 interchange; and 3,900 vehicles per day on SR 138 near the Project site (Caltrans Traffic Data Branch, 2009). Both 210th Street West and 220th Street West are operating at acceptable LOS.

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel, and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? Measures of performance effectiveness include those found in the most up-to-date Southern California Association of Governments (SCAG) Regional Transportation Plan, County Congestion Management Plan, and County General Plan Mobility Element.	☐	☐	☒	☐

Construction of the proposed Project will be integrated with the ASP and is anticipated to occur over a 12 to 18 month period. The Combined Project is anticipated to require a peak construction workforce of 240 employees. Construction-related workforce traffic attributable to the Project would be negligible. The surrounding roadways operate well below capacity given the remote and rural nature of the area, and the existing low daily volumes on these roadways. Though the Combined Project will result in a temporary increase in traffic, it is anticipated that the increase will have little effect on roadway and intersection operations and will still be well within the County and Caltrans' acceptable capacities. Additionally, based on the short-term duration of projected traffic generation the volume increase would be less than significant compared to the typical volume on SR 138 and SR 14. Therefore, impacts would be less than significant.

Operation of the proposed Project will be integrated with the ASP. Facility operations will generate minimal traffic. One to two staff members will be onsite daily, resulting in up to two vehicles per day. Traffic attributable to the Project would represent a negligible increase to that anticipated for the ASP. There would be no impact.

b) Exceed the County Congestion Management Plan (CMP) Transportation Impact Analysis thresholds?	☐	☐	☐	☒

The CMP thresholds will not be exceeded. Construction and operation of the Project would be integrated with the ASP; the Combined Project would contribute 40 peak-hour vehicle trips during construction and approximately 2 peak-hour vehicle trips during operation. Traffic attributable to the Project would represent a negligible increase to that anticipated for the ASP. There would be no impact.

c) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the CMP, for designated roads or highways (50 peak hour vehicles added by project traffic to a CMP highway system intersection or 150 peak hour trips added by project traffic to a mainline freeway link)? ☐ ☐ ☐ ☒

Construction and operation of the proposed Project would be integrated with the ASP. Traffic generation during construction and operation of the Combined Project would generate approximately 240 roundtrips per day during construction and approximately 2 roundtrips per day during operation. Traffic attributable to the Project would represent a negligible increase to that anticipated for the ASP. The volume of traffic added to local roadways and intersections for the Combined Project is a small percentage and is not expected to change LOS. Given the low number of construction trips and the negligible number of operations trips, the Combined Project would not conflict with standards established by Metro, the Congestion Management Agency for Los Angeles County. No impact would occur.

d) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? ☐ ☐ ☐ ☒

The General William J. Fox Airfield is located approximately 14 miles east of the Project site; the Rosamond Skypark is located approximately 15 miles northeast of the Project site; and Edwards AFB is located approximately 20 miles east of the Project site. The Project would not include any buildings or operations that would change air traffic patterns, including either an increase in traffic levels or a change in location that could result in substantial safety risks. PV modules that would be used at the Project site are generally low reflective and would not pose a hazard to general aviation pilots. No impact on air traffic patterns would occur.

e) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ☐ ☒ ☐ ☐

The Project would not result in any hazardous traffic conditions, including hazardous design features such as sharp curves or dangerous intersections. As previously noted, construction of the proposed Project will be integrated with the ASP and access to the site would be provided from the proposed ASP access road, within and adjacent to existing 210th Street West. Construction traffic would present temporary conflicts for motorists in the area as the equipment merges onto roadways, especially onto SR 138. Standard procedures involving the use of flag persons or signs would control the flow of traffic, thereby minimizing potential impacts. In accordance with the Caltrans comment letter provided for the ASP on September 15, 2010, work within State highways would require an encroachment permit and use of oversized-transport vehicles would require a transportation permit. Additionally, mitigation measure TRAFFIC-1 would require implementation of a Construction Traffic Control Plan for the Combined Project to reduce potential conflicts between construction traffic and motorists. Operation of the Project would be integrated with the ASP; Combined Project operations would require one to two staff per day, which would add a negligible amount of traffic to local roadways. Traffic attributable to the Project would represent a negligible increase to that anticipated for the ASP. Therefore, impacts would be less than significant with mitigation.

f) Result in inadequate emergency access? ☐ ☐ ☐ ☒

No roadways would be closed to through traffic during Project construction. Emergency vehicles, residents, and employees would be able to pass through the area without obstruction. Operation of the proposed Project would be integrated with the ASP and would require one to two employees, resulting in negligible traffic that could restrict access during an emergency. There would be no impact.

g) Conflict with the Bikeway Plan, Pedestrian Plan, Transit Oriented District development standards in the County General Plan Mobility Element, or other adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? ☐ ☐ ☐ ☒

The Project is located in a rural area of Los Angeles County where alternative transportation facilities are not available. There would be no impact.

h) Decrease the performance or safety of alternative transportation facilities? ☐ ☐ ☐ ☒

Please refer to the discussion in g) above.

Mitigation and Residual Impact

Potential impacts related to traffic would be mitigated to an insignificant level: (1) through compliance with applicable codes, standards, and ordinances; (2) by preparing and implementing a Construction Traffic Control Plan for the Combined Project; and (3) by implementing the following mitigation measures:

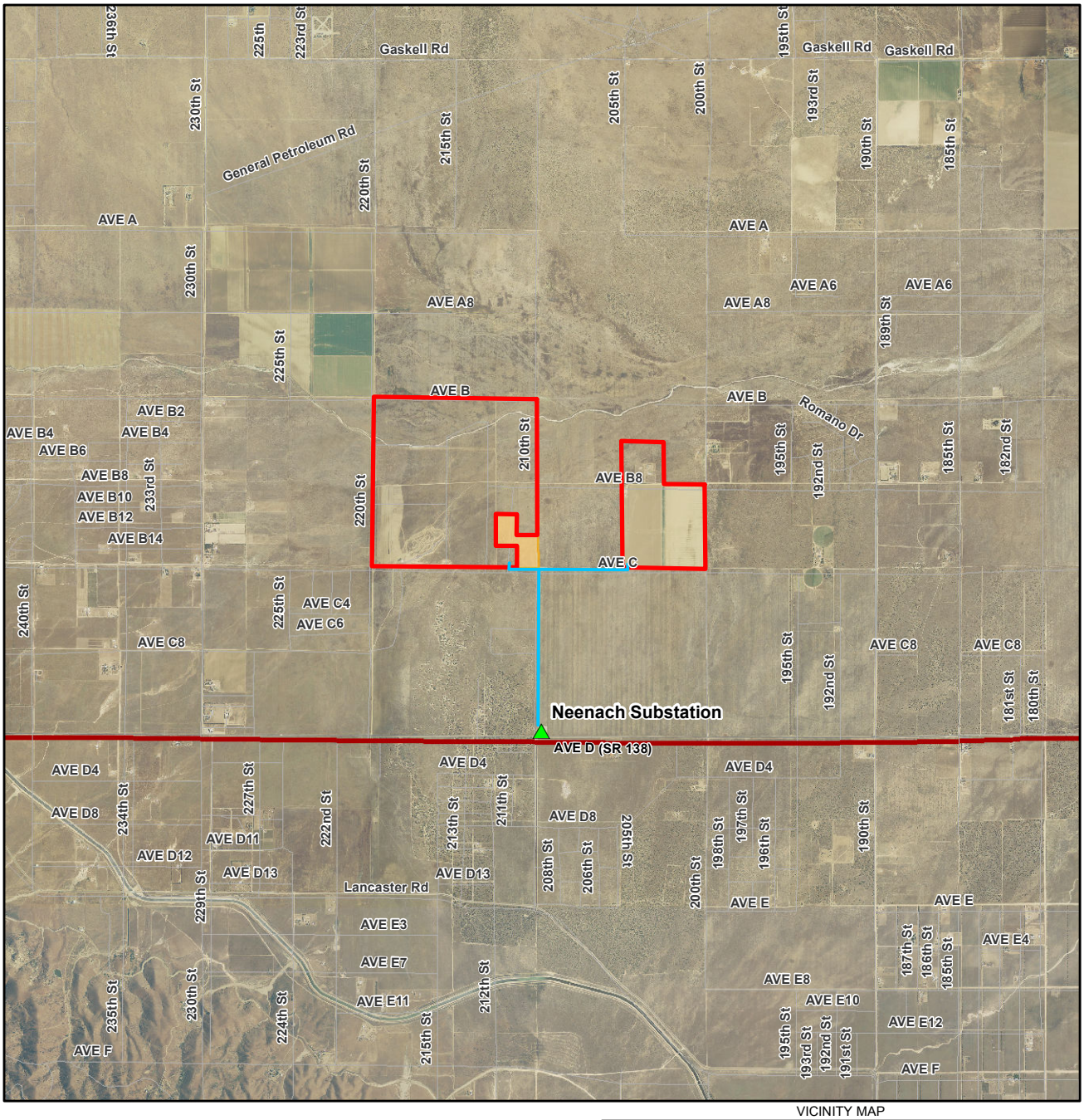
TRAFFIC-1. The Project Sponsor will prepare a Construction Traffic Control Plan addressing both the proposed Project and ASP, and submit the Plan to the County and Caltrans for review and approval prior to starting construction. The Plan will include flagging, safety measures, signage, and other related measures to protect the traveling public and construction workforce.

Based on implementation of the mitigation measure, the potential impacts associated with traffic would be reduced to a less than significant level.

References

CALTRANS Traffic Data Branch, Traffic and Vehicle Data Systems Unit, 2009 All Traffic Volumes on CSHS. Available at: http://traffic-counts.dot.ca.gov/2009all/2009TrafficVolumes.htm.

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH#2010111082. November 8.



LEGEND

- Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Highway
- Local Road

VICINITY MAP

N

0 2,500 5,000

Feet

FIGURE TRAFFIC-1
Project Area Roadways
Alpine Solar Project

18. UTILITIES AND SERVICE SYSTEMS

Environmental Setting

Water Supply and Water Treatment Facilities

Regional water supply conditions are discussed in detail in Section 10. Hydrology and Water Quality. The Project site is located in a rural and sparsely populated area of the Antelope Valley in the northern portion of Los Angeles County and is not serviced by a public sewer system. No connection to local wastewater treatment facilities exists.

Stormwater Drainage Facilities

No stormwater drainage facilities exist onsite. No natural perennial surface waters exist in the immediate vicinity of the site. The proposed Project site is characterized by terrain that is gently sloped to the northeast south of the natural drainage, and to the southeast north of the natural drainage. Elevation ranges from approximately 2,730 to 2,735 feet amsl.

Electricity and Natural Gas

SCE local distribution lines service the Project area. The proposed Project requires the use of facilities to deliver electricity. The proposed Project would be integrated with the ASP and would utilize and connect to approved facilities to be constructed as part of the ASP. The Project would require an underground 34.5 kV collector line to deliver electricity to the ASP substation (no substations or transmission facilities are required on the Project site). Discussion of other energy utilities is not presented here because the Project does not require natural gas or propane.

Solid Waste

Los Angeles County has a large and complex waste management system with eight major solid waste landfills (i.e., facilities receiving more than 50,000 tons of solid waste per year), four small solid waste landfills, and two waste-to-energy facilities. Residential, commercial, and industrial solid waste collection is handled by private haulers. Once collected, the trash may be taken to any landfill that is willing to accept the waste. Non-hazardous solid waste generated in Los Angeles County is disposed at Class III landfills, transformation facilities, permitted inert landfills, or out-of-county landfills.

Six permitted Class III landfills (Bakersfield Metropolitan, Boron Sanitary Landfill, Shafter-Wasco Sanitary Landfill, Ridgecrest-Inyoken Sanitary Landfill, Taft Sanitary Landfill, Tehachapi Sanitary Landfill) and one Class II landfill (Clean Harbors Buttonwill Landfill) are located within approximately 75 miles of the Project site. Two major permitted Class I hazardous waste landfills (Waste Management Kettleman Hills Landfill, McKittrick Waste Treatment), are located in California. The maximum permitted capacity, current operation capacity, remaining capacity, and estimated closure date is with the same as that presented in the approved ASP (County of Los Angeles, 2010).

	Potentially Significant Impact	***Less Than Significant Impact with Mitigation Incorporated***	***Less Than Significant Impact***	***No Impact***
Would the project:				
a) Exceed wastewater treatment requirements of the Los Angeles or Lahontan Regional Water Quality Control Boards?	☐	☐	☐	☒

The Project will generate a minimal amount of wastewater during operation. The PV module washwater will be demineralized water and will only contain dust washed off of the panels. This washwater will be allowed to soak into the ground and evaporate as it drips off the PV modules. No domestic wastewater will be generated as part of the Project. Therefore, no impacts would occur.

b) Create water or wastewater system capacity problems, or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

As stated previously, no significant wastewater will be generated from the proposed Project. The Project would not require construction of new stormwater drainage facilities or expansion of existing facilities. Construction and operation of the proposed Project will be integrated with the ASP and would not impact wastewater treatment facilities.

Project operation would be integrated with the ASP and use water wells located on the ASP site. The historical production rates and current pumping capacity of these existing wells exceed the water demand requirements for construction and operation of the Combined Project. Sufficient water supplies are available to serve the Project from existing entitlements and resources. The Project, therefore, would not require or result in the construction of new public water treatment facilities or the expansion of current facilities. Therefore, no impacts would occur.

c) Create drainage system capacity problems, or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒

Stormwater runoff at the site is predominantly from southwest to northeast, consistent with surface topography. Figure PROJECT- 2 shows the Project site's existing topography and site grading. The proposed Project's PV modules and related facilities will occupy the entire Project site. Drainage from the Project area would be discharged in accordance with historic drainage patterns to the natural drainage channel located on the adjacent ASP Western Parcel.

An SWPPP addressing the Combined Project would be prepared. The SWPP would incorporate BMPs for erosion control and would be approved before the start of construction. During site preparation, the SWPPP would be implemented and initial erosion and sedimentation controls would be installed.

Because stormwater management during Project construction and operation will be integrated with the approved ASP and be conducted in accordance with the construction SWPPP, the Project will not require construction of new stormwater drainage facilities or expansion of existing facilities. Therefore, no impacts would occur.

d) Have sufficient reliable water supplies available to serve the project demands from existing entitlements and resources, considering existing and projected water demands from other land uses?	☐	☐	☒	☐

The Project would use groundwater extracted from water wells located on the ASP site to meet the estimated Combined Project water requirements of about 2 AFY on an ongoing basis for domestic and maintenance purposes. This is substantially less than the historical water use for the ASP site (estimated to be approximately 2,137 AFY for recent farming activity). Compared to typical land uses, where unit water requirements for both agricultural and municipal land uses are within an overall range of about 3 to nearly 7 AFY (Luhdorff & Scalmanini, 2010), the water requirements associated with the Combined Project are exceptionally small. In addition, these water requirements are substantially less than the 0.1 to 0.125 AFY of available water if sustained yield is allocated as presented in the Water Availability discussion in Section 10. Hydrology and Water Quality.

The Combined Project would also use groundwater to meet the estimated water requirements of about 300 AFY during construction (a period of about 12-18 months). This is exceptionally small compared to typical agricultural and municipal land uses, is much less than the 2,137 AFY recently used on the ASP site, and would be temporary. Sufficient water supplies are available to serve the Project from existing resources, and no new or expanded entitlements would be needed. Therefore, water supply impacts would be less than significant.

e) Conflict with the Los Angeles County Low Impact Development Ordinance (L.A. County Code, Title 12, Ch. 12.84 and Title 22, Ch. 22.52) or Drought Tolerant Landscaping Ordinance (L.A. County Code, Title 21, § 21.24.430 and Title 22, Ch. 21, Part 21)? ☐ ☐ ☐ ☒

As previously discussed, preliminary engineering plans are designed to convey runoff to mirror existing flow patterns. Current flows drain to the drainage channel on the adjacent ASP Western Parcel; there are no existing or planned stormwater drainage systems in the vicinity of the Project site. Review and approval of the final site engineering plans by the Department of Public Works would ensure that drainage flows do not conflict with the low impact development ordinance. The Project would use groundwater extracted from water wells located on the ASP site to meet the estimated Combined Project water requirements of about 2 AFY on an ongoing basis for domestic and maintenance purposes, including landscaping. The Project would comply with the drought tolerant landscaping ordinance. As the Project would comply with both the low impact development and drought tolerant landscaping ordinances, no impacts would occur.

f) Create energy utility (electricity, natural gas, propane) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? ☐ ☐ ☒ ☐

The Project does not require natural gas or propane. The proposed Project requires the use of local Southern California Edison facilities to deliver electricity. The proposed Project would be integrated with the ASP and would utilize and connect to approved facilities to be constructed as part of the ASP. The Project would require an underground 34.5 kV collector line to deliver electricity to the ASP substation (no substations or transmission facilities are required on the Project site). Therefore, impacts to energy utility system capacity would be less than significant.

g) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? ☐ ☐ ☒ ☐

Construction and operation of the proposed Project would be integrated with the ASP and would produce a small amount of solid and hazardous waste associated with maintenance activities. Class I, II, and III landfills with the potential to serve the Project have sufficient permitted capacity to accommodate the Project's solid waste disposal needs. Therefore, impacts would be less than significant.

h) Comply with federal, state, and local statutes and regulations related to solid waste? ☐ ☐ ☐ ☒

Construction and operation of the proposed Project would be integrated with the ASP and would generate a small amount of waste material that will be disposed of at the nearest licensed facility to accept solid waste. The Project would comply with all federal, state, and local statutes and regulations related to solid waste. Therefore, no impact would occur.

References

Antelope Valley Areawide General Plan. Adopted December 4, 1986.

California Department of Water Resources (DWR). 2004. California's Ground Bulletin 118: South Lahontan Hydrologic Region, Antelope Valley Groundwater Basin. February 27, 2004.

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH#2010111082. November 8.

Los Angeles County Countywide Integrated Waste Management Plan – 2007 Annual Report. May 2009.

Los Angeles County Department of Regional Planning (LACDRP). 2009. Antelope Valley Area Plan Update Background Report. April 2009.

Los Angeles County Solid Waste Management Committee-Integrated Waste Management Task Force. 2009. Observations on How the Current Economic Downturn Has Impacted Waste Disposal. March 19, 2009.

Luhdorff & Scalmanini Consulting Engineers. 2010. Water Requirements and Groundwater Supply – AV Solar Ranch One. Technical Memorandum from Joseph C. Scalmanini to Dennis Hunter, Los Angeles County Department of Public Works. June 1, 2010.

19. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less Than Significant Impact with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

As discussed in previous sections, and specifically in the Biological Resources and Cultural Resources sections, through compliance with applicable codes, standards, and ordinances, and with the implementation of mitigation, these potential impacts would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

Through compliance with applicable codes, standards, and ordinances and implementation of mitigation, the proposed Project's incremental effect is reduced to less than significant. Therefore, the potential for cumulative effects from the combination of the Project's incremental impact and the effects of other projects is less than significant, as documented for each environmental factor below.

Aesthetics

The ASP Western Parcel (see cumulative projects list in Appendix A and Figure CUMULATIVE-1) is located adjacent to the proposed Project and construction and operation of the proposed Project will be integrated with the ASP. No additional impacts to visual resources are anticipated in association with the Project for the placement of solar PV modules and related support facilities associated with the proposed Project. Motorists traveling in the vicinity of the Combined Project would not differentiate the proposed Project from the approved ASP.

AV Solar Ranch One project (see cumulative projects list in Appendix A and Figure CUMULATIVE-1) is an approved 230-MW solar PV project 2 miles east of the Project site along SR 138. Ruby Solar Wind project is a 20-MW solar PV project located 2 miles southeast of the Project site adjacent to SR 138 and 180th Street North. While motorists on SR 138 would see the Project and these two projects in rapid succession, the Project would not be visible at the same time as either of these two other projects. Motorists traveling west would not see the Combined Project until they pass AV Solar Ranch One and Ruby Solar

Wind projects, because west of 190th Street any views of the Combined Project site are blocked by topography and a Joshua Tree Woodland SEA parcel (see Figure PROJECT-1). Motorists traveling east would first see the Combined Project but would not see Ruby Solar Wind and AV Solar Ranch One projects until they had driven past the Combined Project site and passed 190th Street. This is because the view would be blocked by a Joshua Tree Woodland SEA and other vegetation.

Although the AV Solar Ranch and Ruby Solar Wind facilities and the Combined Project would be visible from the PCT, the impact would not be significant. Therefore, the cumulative impact that will result from the combination of the Project's incremental impact and the effects of other projects is not significant.

Agriculture/Forest

The Project's incremental effect on agricultural resources would not be cumulatively considerable, and the Project's cumulative effect is therefore not significant. The Project is located in a region with agricultural uses; however, the Antelope Valley has been historically and is currently limited by water availability, water costs, and climatic conditions. The proposed Project would result in the temporary conversion of 35 acres of lands designated for grazing to renewable energy production (for a Combined Project conversion of 835 gross acres), thereby precluding these activities for the planned life of the Combined Project (30 years). The Combined Project would be expected to contribute to the overall trend of conversion of agricultural lands to other uses in the Antelope Valley when considered together with other potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1. However, given the existing limitations to agricultural production in the Antelope Valley, in addition to the temporary nature of the agricultural conversion, the proposed Project's incremental contribution to cumulative agricultural impacts is negligible and the Combined Project's cumulative impact on agricultural resources is considered less than significant.

Air Quality

Through compliance with applicable codes, standards, and ordinances and implementation of mitigation, the proposed Project's incremental increase in air quality emissions during construction would be negligible. Further, due to the implementation of similar air quality compliance and mitigation measures by the ASP, the Combined Project's emissions would be below AVAQMD thresholds; the Combined Project's incremental effect and the effects of other projects listed in Appendix A and shown on Figure CUMULATIVE-1 related to construction emissions would not be significant. The Combined Project provides a cumulative benefit by generating clean renewable energy without reliance on fossil fuels; thereby improving air quality.

Biological Resources

To a large extent, the Project site has not provided valuable habitat because of prior disturbance due to agricultural operations. Therefore, the Project would not contribute to cumulative impacts. Construction and operation of the Project would be integrated with the ASP; because of the distance between the Combined Project and the cumulative project locations there is incongruous habitat and/or species use among project sites. Therefore, the Combined Project would not result in an incremental impact to the biological resources. Further, the cumulative impact on biotic resources that would result from the combination of the Combined Project's incremental effect and the effects of the other projects listed in Appendix A and shown on Figure CUMULATIVE-1 would not be significant.

Cultural Resources

The proposed Project has a low potential to affect cultural resources and a moderate potential to contribute to the loss of paleontological resources if Project features extend 6 feet below grade (which is not anticipated). With the implementation of mitigation, the Project would not result in an incremental increase in impacts to cultural or paleontological resources. Construction and operation of the proposed Project would be integrated with the ASP and due to the implementation of cultural and paleontological mitigation measures by both the proposed Project and the ASP; any contribution to cumulative impacts as part of Combined Project implementation would be rendered less than cumulatively considerable through mitigation measures. The cumulative impact that will result from the combination of the Combined Project's incremental impact and the effects of other projects listed in Appendix A and shown on Figure CUMULATIVE-1 is not significant.

Energy

Solar PV is a relatively low-impact renewable energy method that generates clean power. Other solar PV projects have been proposed (such as the Ruby Solar Wind project) and others have been approved (such as the AV Solar Ranch One Project) to harness the available solar resources in the Antelope Valley. The Project would not represent an incremental increase in solar PV energy production and requirements for land and other resources for Project implementation would represent a negligible increase as compared to the approved ASP. Construction and operation of the proposed Project would be integrated with the ASP; however, the Combined Project would maintain a nominal 92 MWs of PV generation. When combined with the impacts of the other potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1, the incremental addition of the Combined Project would not contribute to cumulatively significant impacts.

Geology/Soils

Through compliance with applicable codes, standards, and ordinances and implementation of mitigation, the proposed Project's incremental effect on geotechnical hazards is negligible. Construction and operation of the Project would be integrated with the ASP; because of the distance between the Combined Project and cumulative project locations, the Combined Project would not result in an incremental increase in geotechnical hazards. The cumulative impact that would result from the combination of the Combined Project's incremental impact and the effects of the other potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1,is not significant.

Greenhouse Gas Emissions

Construction and operation of the proposed Project would be integrated with the ASP. The Combined Project's incremental effect is not cumulatively considerable, and the Combined Project's cumulative effect is positive in that greenhouse gas emissions would be reduced. Therefore, the Combined Project, in conjunction with other approved and proposed projects listed in Appendix A and shown on Figure CUMULATIVE-1, would not be expected to result in significant cumulative impacts to greenhouse gas emissions.

Hazards/Hazardous Materials

The context for the analysis of cumulative impacts from environmental safety is limited to the immediately surrounding area and does not take into consideration the potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1. Hazardous materials and contamination issues are

largely site-specific and generally would not combine with impacts from other projects to result in cumulative impacts.

Based on land uses in the surrounding area (primarily agricultural and open space) and the limited amount and type of hazardous materials to be used as part of the integrated construction and operation of the proposed Project and ASP, no significant incremental cumulative impacts associated with environmental safety would be expected to occur as a result of the Combined Project's implementation. Regulations implemented by the DTSC, LACFD, and the RWQCB would require similar measures being applied to other potential developments with environmental safety issues in the Project region. Therefore, the cumulative impact that will result from the combination of the Combined Project's incremental impact and the effects of other projects is not significant.

Hydrology/Water Quality

Construction and operation of the Project would be integrated with the ASP. Water pollutants that could be released from development associated with the Combined Project and other potential cumulative projects could include runoff laden with sediment, vehicle and equipment fluids, household chemicals, trash, landscaping byproducts, and other typical urban stormwater pollutants. NPDES was established to regulate stormwater pollution, and all new development including the Combined Project would be required to comply with the conditions of applicable NPDES permits. Additionally, such development would be required to be in compliance with the LRWQCB Basin Plan (LRWQCB, 1995). The Basin Plan is a regional plan designed to reduce the pollutant levels of receiving waters, and thus is intended to achieve a cumulative reduction in water pollutants. Compliance with the plan would ensure that future development in the Combined Project area would not substantially contribute to cumulative water quality impacts. Therefore, the Combined Project, in conjunction with other approved and proposed projects listed in Appendix A and shown on Figure CUMULATIVE-1, would not be expected to result in significant cumulative impacts on surface water or groundwater quality.

Construction and operation of the Project would be integrated with the ASP and would not represent a new or additional risk to flood hazards. There are no other pending projects within the Combined Project's watershed defined in the Bonadiman hydrology report (2010), and, therefore, the Combined Project would not be expected to cumulatively contribute to flooding impacts. Future development in the Combined Project area (see cumulative projects list in Appendix A and Figure CUMULATIVE-1), would likely increase impermeable surfaces and, as a result, increase the volume of stormwater runoff that may be directed to applicable storm drain systems and/or offsite drainages. However, the Combined Project is designed to balance pre- and post-construction runoff volumes; any increases resulting from the Combined Project would be insignificant as reflected in the Preliminary Hydrology and Hydraulics Report (Bonadiman, 2010). Additionally, through implementation of BMPs and the Combined Project's design/applicant-committed measures, as discussed in Section 10. Hydrology and Water Quality, the Combined Project would not contribute substantially to hydrological impacts. Therefore, the Combined Project, in conjunction with other approved and proposed projects listed in Appendix A and shown on Figure CUMULATIVE-1, would not be expected to result in significant cumulative impacts on hydrology.

Land Use/Planning

The Project is consistent with the applicable land use policies, plans, and regulations. Construction and operation of the proposed Project would be integrated with the ASP, which was also documented to be consistent with applicable land use policies, plans, and regulations. Therefore, the Combined Project's incremental effect on land use plans, policies, and regulations would be less than significant when viewed in connection with the effects of past, current, and probable future projects (see potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1).

Mineral Resources

The proposed Project and ASP are not located within an area of known mineral resources. Therefore, there are no anticipated cumulative impacts related to mineral resources. The Combined Project's incremental effect is not cumulatively considerable, and the Combined Project's cumulative effect is therefore not significant.

Noise

Through compliance with applicable codes, standards, and ordinances and implementation of mitigation, the proposed Project's incremental increase in noise would be negligible. Further, due to the implementation of similar noise reduction measures by the ASP, the Combined Project's incremental effect to noise would not be cumulatively considerable and, therefore, the Combined Project's cumulative effect would not be significant. As noted in the potential cumulative projects list in Appendix A and shown on Figure CUMULATIVE-1, several projects could be constructed and operating at the same time as the Combined Project. Most notable on this list, for both project type and similarity of construction methods, are the AV Solar Ranch One and the Ruby Solar Wind projects. However, the 230-MW AV Solar Ranch One project was found to be cumulatively insignificant (Los Angeles County, 2010). The 20-MW Ruby Solar Wind project is still in the early stages of environmental review, but given the proposed generating capacity, would not likely be associated with noise emissions at the same scale as the Combined Project or AV Solar Ranch One project. Given that the relative distance from the Combined Project to the Ruby Solar Wind and AV Solar Ranch One projects is approximately 2 and 3 miles, respectively, the cumulative impact that will result from the combination of the Combined Project's incremental impact and the effects of other projects is not significant.

Population/Housing

The potential for cumulative population, housing, and recreational impacts exists where multiple projects in an area have overlapping construction or operational schedules. Projects with overlapping construction or operational schedules could collectively result in a demand for labor that cannot be met by the local labor pool. Construction and operation of the proposed Project would be integrated with the ASP. The 200 to 240 persons estimated for the Combined Project construction could easily be accommodated by the total available construction workforce in the Los Angeles and Kern County areas. As outlined in the cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1, the AV Solar Ranch One project may be in construction concurrently with the Combined Project. The AV Solar Ranch One project is proposed 3 miles east of the Project site and would require an estimated construction workforce of 285 per day or 490 workers per day on an accelerated schedule (Los Angeles County, 2009).

If the construction schedule of the Combined Project coincides with that of AV Solar Ranch One, and other local projects such as the Ruby Solar Wind project, some additional construction workers from outside the local area may be required for periods of time. However, due the temporary nature of

construction, the cumulative impact that will result from the combination of the Combined Project's incremental impact and the effects of other projects is not significant.

Public Services

Construction and operation of the proposed Project would be integrated with the ASP. The minimal short-term increase in work force during construction and operation of the Combined Project would not be expected to exceed existing available fire and sheriff staffing/services, or the availability of existing schools, parks, libraries, and other public facilities. When combined with the impacts of the other potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1, the Combined Project would not result in an incremental increase in public facility impacts. Therefore, the Combined Project would not create cumulatively significant impacts.

Recreation

Construction and operation of the proposed Project would be integrated with the ASP, which was also documented to be consistent with applicable land use policies, plans, and regulations, including recreation, parkland, and open space. Therefore, the Combined Project's incremental effect on recreation and consistency with recreation, parkland, and open space policies and regulations would be less than significant when viewed in connection with the effects of past, current, and probable future projects (see potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1).

Transportation/Traffic

Traffic attributable to the Project would represent a negligible increase to that anticipated for the ASP. When combined with the impacts of the other potential cumulative projects listed in Appendix A and shown on Figure CUMULATIVE-1, the Combined Project would not result in an incremental increase in traffic impacts. As outlined in the cumulative projects list in Appendix A, the AV Solar Ranch One project may be in construction concurrently with the Combined Project. Although traffic would increase temporarily on SR 138, the existing volumes on SR 138 are low. The cumulative impact that will result from the combination of the combined Project's incremental impact and the effects of other projects is not significant.

Utilities/Services

Utilities/services are limited in this area of the Antelope Valley; however, population is low so the demand is also low. Water for the Project is available from the ASP site through the existing water wells, and would not require additional supply beyond that identified for the ASP. Historic water use from the ASP groundwater wells has been estimated to be higher than the water use anticipated for the Combined Project. Therefore, groundwater use would actually drop with implementation of the Combined Project, resulting in a potentially beneficial cumulative effect. Because the Project would be served by a private septic system (constructed as part of the approved ASP), the Project would have no effect on public sewer services.

The cumulative impact that will result from the combination of the Combined Project's incremental impact and the effects of other projects listed in Appendix A and shown on Figure CUMULATIVE-1, is less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ☐ ☒ ☐ ☐

As discussed in previous sections, through compliance with applicable codes, standards, and ordinances, and with the implementation of mitigation, adverse effects on human beings, either directly or indirectly, would be less than significant with mitigation incorporated.

References

County of Los Angeles. 2010. Alpine Solar Project Mitigated Negative Declaration. County Project No. R2009-02089. CUP No. RCUPT200900158. Environmental Review No. RENVT200900128. SCH# 2010111082. November 8.

Los Angeles County. 2010. Final Environmental Impact Report, AV Solar Ranch One Project. County Project No. R2009-02239. Vesting Tentative Tract Map No. TR071035. Conditional Use Permit No. RCUPT200900026. Environmental Review No. RENVT200900027. State Clearinghouse No. 2009041145. August.

Los Angeles County. 2009. Los Angeles County Department of Regional Planning Notice of Preparation. AV Solar Ranch One Project, County Project No. R2009-02239. April 29.

Appendix A
Cumulative Projects List

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TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
-	Energy	Alpine Solar Project	Nominal 92-megawatt (MW) alternating current (AC) solar photovoltaic (PV) generating facility located on approximately 580 acres of developable area in northern Los Angeles County.	580	Los Angeles County	Approved.	Northwest corner of Avenue C and 210th Street West.	NRG Solar Alpine LLC
Projects Within 5 Miles of Combined ASP Site								
1	Energy	AV Solar Ranch One	Nominal 230-MW AC PV generating facility located on approximately 1,955 acres. Major Project components include PV panel arrays, an electrical substation, a 20,000 square-foot Operations and Maintenance building with associated parking, and on-site drainage improvements consisting primarily of infiltration basins throughout the site. The Project also includes an overhead 230-kV transmission line, approximately 4.25 miles long (0.75 mile on-site and 3.5 miles off-site), that is proposed to run along the public ROW of 170th Street West and adjacent private property to interconnect to Southern California Edison's planned Whirlwind Substation north of the Project site in southern Kern County.	2,100	Los Angeles and Kern Counties	Project approved 2011.	Located approximately 15 miles northwest of downtown Lancaster; the project is located both north and south of SR-138, and is approximately bounded on the north by West Avenue B-8, on the south by West Avenue E, on the east by 155th Street West and on the west by 180th Street West.	NextLight Renewable Power, LLC

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TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
2	Transportation	North County Highway Corridor Plan	Proposed regional transportation plan to expand SR-138 into a 6-lane expressway and to improve corridor integration on I-5 and SR-14.	Across 250 miles	California Department of Transportation	Improvements to I-5 and SR-14 expected around 2020 and 2025; SR-138 expansion to be implemented after 2030.	North Los Angeles County.	Multiple local and state agencies
3	Renewable energy	Ruby Solar Project	Proposed solar photovoltaic facility to generate up to 20 MW.	160	Los Angeles County	Project under early environmental review.	Adjacent to State Route 138 and 180th Street North	Ruby Solar, LLC (partnership between Pacific Valley, LLC and Cadmos)
4	Large-scale planned community	Willow Springs Specific Plan	Specific plan for mixed use development in Kern County.	--	Kern County	Residential housing subdivision approved as part of specific plan.	South Kern County, from Avenue A to Dawn Road and from 50th Street West to 190th Street West.	Kern County
5	Public services	Antelope Valley Water Bank Project	Project to develop facilities to recharge and store imported surface water beneath properties in the Antelope Valley. Project area spans approximately 13,440 acres and requires construction of wells, facilities, and accessory structures for water transportation.	13,440	Kern County	Project approved 2006.	Area proposed for recharge and recovery facilities is bounded by Rosamond Blvd. to the north, Avenue A to the south, 170th Street West to the west, and 100th Street West to the east.	Western Development and Storage, LLC
6	Renewable Energy	Antelope Valley Solar Project	Proposed solar photovoltaic facility to generate up to 650 MW.	5,175	Kern County/Los Angeles County	DEIR released for public review on April 18, 2011.	Project site is located along the boundary of Kern and Los Angeles counties northwest of the City of Lancaster.	Renewable Resource Group Inc.

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TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
7	Renewable energy	Blue Sky Wind Energy Project	Proposed wind energy facility to generate up to 225 MW.	7,500	Los Angeles County	Application submitted to LA County on April 4, 2011.	Portal Ridge of the San Gabriel Mountains. Approximately 4 miles west of the City of Lancaster.	NextEra Energy Resources, LLC
8	Renewable energy	Wildflower Green Energy Farm	Proposed wind and solar energy facility to generate up to 239 MW of electricity.	2,300	Los Angeles County	Application submitted to LA County on August 9, 2010.	Near the intersection of Lancaster Road and 170 Street, directly West of the Antelope Valley California Poppy Reserve.	Element Power US, LLC.
9	Energy	Tehachapi Renewable Transmission Project	Proposed transmission system improvements to deliver electricity from renewable energy projects in Kern County to the Los Angeles Basin.	--	California Public Utilities Commission	DEIR/S issued Feb. 2009; construction anticipated in 2009 and ending in 2013.	Project area traverses portions of Kern, Los Angeles, Riverside, and San Bernardino counties and the ANF.	Southern California Edison
Projects Beyond 5 Miles of Combined ASP Site								
10	Renewable energy	Pacific Wind Energy Project	Proposed wind energy facility to generate up to 250 MW, with proposed interconnection into Whirlwind Substation.	8,300	Kern County	NOP issued September 30, 2009.	Project site is generally bound on the north and west by the Tehachapi Mountains, to the south by Patterson Road, and to the east by 160th Street West.	enXco Development Corporation
11	Renewable energy	Manzana Wind Energy Project	Approved wind energy facility to generate up to 300 MW.	5,820	Kern County	Approved on July 29, 2008	Southeastern Kern County. Approximately 20 miles northwest of the City of Lancaster and 8 miles northeast of Neenach.	Iberdrola Renewables
12	Renewable energy	Antelope Solar 2	Proposed solar photovoltaic facility to generate up to 10 MW.	80	Los Angeles County	Project under early environmental review.	Northwest Antelope Valley, near the intersection of 13th street West and West Avenue G.	Recurrent Energy

APPENDIX A

TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
13	Renewable energy	Catalina Wind Energy Project	Proposed wind energy facility to generate up to 350 MW.	7,440	Kern County	Application submitted December 16, 2010	Southeastern Kern County. Approximately 15 miles northwest of the City of Lancaster and 12 miles northeast of Neenach.	Enxco
14	Renewable energy	Antelope Solar 1	Proposed solar photovoltaic facility to generate up to 10 MW.	111	Los Angeles County	Project under early environmental review.	Northwest Antelope Valley, near the intersection of Fairmont-Neenach Road and 120th Street West.	Recurrent Energy
15	Renewable energy	Antelope Solar Farm	Proposed solar photovoltaic facility to generate up to 20 MW.	320	Los Angeles County	Application currently under staff review.	Northwest Antelope Valley, near the intersection of 110th Street West and West Avenue J.	Fotowaito Renewable Ventures
16	Renewable energy	105th Street North 1	Proposed solar photovoltaic facility to generate up to 5.9 MW.	46	Los Angeles County	Project under early environmental review.	Northwest Antelope Valley, near the intersection of 105th Street West and West Avenue I.	Recurrent Energy
17	Infill/ redevelopment	Proposed developments in redevelopment areas	Development summary consists of a total of 11,630 residential units; 385 acres of public facilities; 379 acres of commercial development, 163 acres of industrial development, and 17 acres of mixed uses.	--	City of Lancaster	Development Summary Report (current as of July 2009).	City of Lancaster, within redevelopment areas: Residential Project Area; Central Business District, Fox Field Project Area; Amargosa Project Area; and Project Areas 5, 6, and 7.	Various

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TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
17, 18	Infill	Proposed developments (excludes redevelopment areas)	Development summary indicates a total of 11,279 residential units; 73 acres of public facilities; 134 acres of commercial development, 104 acres of industrial development, and 73 acres of mixed uses. Infill development includes the Sierra Demonstration Plant (Map ID #18), which is a solar thermal test site occupying 95 acres in the City of Lancaster. The facility can generate a maximum of 7.5 MW and has been operating since 2009.	--	City of Lancaster	Development Summary Report (current as of July 2009).	City of Lancaster, outside redevelopment areas.	Various
19	Transportation	California High Speed Rail (CAHST)	Proposes 800-mile statewide high-speed train system from Sacramento to San Diego.	--	California Department of Transportation	Construction of Southern CA segment is proposed to begin as early as 2011.	A portion of the Southern California route would traverse the Cities of Lancaster and Palmdale about 20 miles east of the Project site.	California High-Speed Rail Authority
20	Master planned community	Centennial Specific Plan	Master Plan Community of up to 23,000 dwelling units, and 14 million total sf of non-residential development, including commercial facilities, three schools, one golf course, open space areas, and roads.	12,000	Los Angeles County	EIR NOP issued March 2004; Project build-out over 20 years.	Northwestern portion of the Antelope Valley, 1 mile east of I-5 and immediately adjacent to the north and south of SR-138.	Centennial Founders, LLC

APPENDIX A

TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
21	Large-scale planned community	Gorman Post Ranch	Residential development consisting of 533 single family units on 2,725.38 acres.	2,725	Los Angeles County	NOP issued January 10, 2007; EIR in progress.	Northwestern corner of unincorporated Los Angeles County just south of Kern County. The site is located on Gorman Post Road between Gorman School Road and Lancaster Road (SR-138), just northeast of I-5 and southeast of Gorman.	Gorman Post Ranch, LLC
CAISO Interconnection Queue								
--	Renewable energy	Solar PV electric generation facility	Proposed solar PV electric generation project with a maximum capacity of 211.76 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2011.	Location unspecified in Kern County. Project not identified within 5 miles of the ASP and 35-acre site (Combined Project site).	Unspecified
--	Renewable energy	Solar thermal electric generation facility	Proposed solar thermal generation project with a maximum capacity of 231 MW. Proposed interconnection into the SCE Antelope-Magunden 230-kV transmission line.	--	California Energy Commission	Authority to Construct not filed; anticipated online date: April 2011.	Kern County, location unspecified.	Unspecified

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TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
--	Renewable energy	Solar thermal electric generation facility	Proposed solar thermal generation project with a maximum capacity of 420 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	California Energy Commission	Authority to Construct not filed; anticipated online date: October 2013.	Los Angeles County, location unspecified.	Unspecified
--	Renewable energy	Wind electric generation facility	Proposed wind generation project with a maximum capacity of 100 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2012.	Location unspecified in Kern County. Project not identified within 5 miles of the Combined Project site.	Unspecified
--	Renewable energy	Wind electric generation facility	Proposed wind generation project with a maximum capacity of 160 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2013.	Location unspecified in Kern County. Project not identified within 5 miles of the Combined Project site.	Unspecified
--	Renewable energy	Wind electric generation facility	Proposed wind generation project with a maximum capacity of 250 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2010.	Location unspecified in Kern County. Project not identified within 5 miles of the Combined Project site.	Unspecified
--	Renewable energy	Wind electric generation facility	Proposed wind generation project with a maximum capacity of 340 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2011.	Location unspecified in Kern County. Project not identified within 5 miles of the Combined Project site.	Unspecified

APPENDIX A

TABLE CUMULATIVE-1

Alpine Solar – 35-Acre Project and Alpine Solar Project (Combined Project) Cumulative Projects/Scenarios Considered

Map ID*	Project Type	Project/ Plan Name	Description	Acres	Jurisdiction	Timeframe/ Status	Location	Project/Plan Proponent
--	Renewable energy	Wind electric generation facility	Proposed wind generation project with a maximum capacity of 500 MW. Proposed interconnection into the planned SCE Whirlwind Substation.	--	Kern County	Current anticipated online date: December 2014.	Location unspecified in Kern County. Project not identified within 5 miles of the Combined Project site.	Unspecified

*Cumulative Projects List derived from the AV Solar Ranch One EIR, County of Los Angeles, 2010, and Renewable Energy Projects, Los Angeles County Department of Regional Planning, 2011.

Notes:

DEIR/S = draft environmental impact report/statement

PV = photovoltaic

sf = square feet

Appendix B
Air Quality Construction Emissions

APPENDIX B

NRG Alpine Construction Emissions

Construction Equipment

Activity	Equipment	Number of Pieces	Duration (months)	Duration (Days)	Horse-power	Load Factor	Hours per Day	Emission Factors (g/bhp hr)							Emissions (lbs per Day)						Emissions (metric tons)
								CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Site Preparation and Clearing/Grading	Water Truck	3	3	66	189	0.5	8	1.976	0.449	3.317	0.004	0.200	0.178	324.222	10	2	17	0.02	1	1	49
	Grader	4	2	44	174	0.61	8	2.074	0.488	3.789	0.004	0.219	0.195	346.974	16	4	28	0.03	2	1	52
	Scraper	2	2	44	313	0.72	8	1.44	0.512	4.852	0.005	0.291	0.259	409.544	11	4	39	0.04	2	2	65
	Roller	4	3	66	95	0.56	8	2.255	0.649	3.987	0.004	0.194	0.173	318.534	8	2	15	0.02	1	1	36
Underground Work	Backhoe	3	6	132	108	0.55	8	2.191	0.55	3.426	0.004	0.312	0.278	312.846	7	2	11	0.01	1	1	59
	Roller	3	6	132	95	0.56	8	2.255	0.649	3.987	0.004	0.194	0.173	318.534	6	2	11	0.01	1	0	54
	Water Truck	3	10	220	189	0.5	8	1.976	0.449	3.317	0.004	0.200	0.178	324.222	10	2	17	0.02	1	1	162
System Installation	Forklift	16	10	220	93	0.6	8	1.006	0.223	1.677	0.002	0.102	0.091	170.643	16	4	26	0.03	2	1	268
	Pile Driver	5	8	176	204	0.78	8	2.281	0.281	2.767	0.005	0.146	0.130	426.608	32	4	39	0.07	2	2	478
	Water Truck	0	0	0	189	0.78	8	1.976	0.449	3.317	0.004	0.200	0.178	324.222	0	0	0	0.00	0	0	0
Cleanup/Restoration	Grader	2	1	22	174	0.61	8	2.074	0.488	3.789	0.004	0.219	0.195	346.974	8	2	14	0.01	1	1	13

Note: Emission Factors assume 2010 equipment.

Small Construction Equipment

Activity	Equipment	Number of Pieces	Duration (Days)	Hours per Day	Emission Factors (lb/hr)							Emissions (lb/day)						Emissions (metric tons)
					CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Underground Work	5-kW Generator	0	132	8	0.07	0.02	0.11	0.0002	0.01	0.01	10.20	0.00	0.00	0.00	0.00	0.00	0.00	0
System Installation	ATV	32	220	8	0.063	0.003	0.002	0.000	0.000	0.000	0.253	16.13	0.72	0.40	0.09	0.03	0.03	6
	5-kW Generator	6	220	8	0.07	0.02	0.11	0.0002	0.01	0.01	10.20	3.40	0.78	5.28	0.01	0.31	0.28	49
Testing	20-kW Generator	2	264	8	0.07	0.02	0.11	0.0002	0.01	0.01	10.20	1.13	0.26	1.76	0.00	0.10	0.09	20

Notes:
EFs from the California Air Resources Board's OFFROAD2007 model for Los Angeles County.
For the ATV, it was assumed the horsepower range would be 25-50 hp.
$PM_{2.5}$ emission factors were calculated following the SCAQMD Particulate Matter $(PM)_{2.5}$ Significance Thresholds and Calculation Methodology, October 2006. For off-road combustion sources, 89% of the PM_{10} would be $PM_{2.5}$.

Onsite Vehicles

Activity	Vehicle	Number of Pieces	Duration (Days)	Miles per Day	Emission Factors (lb/mile)							Emissions (lb/day)						Emissions (metric tons)
					CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Underground Work	Dump Truck	16	220	10	0.045	0.0278	0.0833	0.0001	0.0063	0.0057	8.4774	7.15	4.45	13.32	0.01	1.00	0.91	135
System Installation	Pickup Trucks	80	220	10	0.005	0.0004	0.0048	0.0000	0.0004	0.0003	0.7676	4.05	0.34	3.83	0.01	0.32	0.28	61
Testing	Pickup Trucks	16	264	10	0.005	0.0004	0.0048	0.0000	0.0004	0.0003	0.7676	0.81	0.07	0.77	0.00	0.06	0.06	15

Offsite Vehicles

Activity	Vehicle	Number of Pieces	Duration (Days)	Miles per Day	Emission Factors (lb/mile)							Emissions (lb/day)						Emissions (metric tons)
					CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
All Phases	Workers	240	264	40	0.004	0.0004	0.0004	0.0000	0.0001	0.0000	0.6318	34.33	3.84	3.92	0.06	0.59	0.28	726

Notes:
EFs from the California Air Resources Board's EMFAC 2007 model for Los Angeles County in the year 2010. It was assumed that the pickup trucks and water trucks would travel at 5 mph and employees would travel at 45 mph.
It was assumed the 2010 emission factors would be a conservative estimate of emissions that could occur as a result of vehicle trips in 2011 because the EMFAC emissions factors decrease slightly over time.

22 workdays per month

		CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Phase 1 Construction Emissions (lbs/day)		45	12	98	0	6	5	201
AVAQMD Thresholds		548	137	137	137	82	82	

Note: Phase 1 = Site Preparation and Clearing/Grading

		CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Phase 2 Construction Emissions (lbs/day)		103.63	19.87	129.17	0.26	8.02	7.14	1306.54
AVAQMD Thresholds		548	137	137	137	82	82	

Note: Phase 2 = Underground Work, System Installation and Testing

		CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Phase 3 Construction Emissions (lbs/day)		8	2	14	0	1	1	13
AVAQMD Thresholds		548	137	137	137	82	82	

Note: Phase 3 = Cleanup/Restoration

APPENDIX B

Summary of Summed Exhaust and Fugitive Dust Emissions and Comparison to AVAQMD Thresholds

	Exhaust Emissions		Fugitive Dust Emissions		Total Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**	**PM10**	**PM2.5**
Phase 1 Construction Emissions (lbs/day)	6	5	74	15	80	20
				AVAQMD Thresholds	82	82

Note: Phase 1 = Site Preparation and Clearing/Grading
It was assumed all mass grading activities would occur during Phase 1.

	Exhaust Emissions		Fugitive Dust Emissions		Total Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**	**PM10**	**PM2.5**
Phase 2 Construction Emissions (lbs/day)	8.02	7.14	47	10	55	17
				AVAQMD Thresholds	82	82

Note: Phase 2 = Underground Work, System Installation and Testing
It was assumed all excavation activities would occur during Phase 2.

	Exhaust Emissions		Fugitive Dust Emissions		Total Emissions	
	PM10	**PM2.5**	**PM10**	**PM2.5**	**PM10**	**PM2.5**
Phase 3 Construction Emissions (lbs/day)	1	1	NA	NA	1	1
				AVAQMD Thresholds	82	82

Note: Phase 3 = Cleanup/Restoration
It was conservatively assumed that all grading and excavation would occur in Phases 1 and 2 to develop the worst case daily emissions.

Mass Grading Emissions

Phase	Acres Graded per Day	Uncontrolled PM10 Emission Factor (lb/acre/day)	Controlled PM10 Emission Factor (lb/acre/day)	Emissions (lb/day)	
				PM10	**PM2.5**
Site Preparation and Clearing/Grading	9.5	20	7.8	74	15

1. The site grading default-level emission factor from URBEMIS2007 was assumed to include fugitive dust from truck travel on unpaved surfaces.

2.Emission factor from URBEMIS2007, the controlled emission factor assumes the graded area is watered three times per day with an efficiency of 61%.

3. $PM_{2.5}$ emission factors were calculated following the SCAQMD Particulate Matter $(PM)_{2.5}$ Significance Thresholds and Calculation Methodology, October 2006.
For construction fugitive dust sources, 20.8% of the PM_{10} would be $PM_{2.5}$.

Excavation Emissions

Phase	Total Cubic Yards Excavated	Number of Days	Uncontrolled PM10 Emission Factor (ton/1,000 cy)	Controlled PM10 Emission Factor (ton/1,000 cy)	Emissions (lb/day)	
					PM10	**PM2.5**
Underground Work/Installation	87,000	220	0.059	0.023	47	10

1. Emission factor from URBEMIS2007, the controlled emission factor assumes the graded area is watered three times per day for an efficiency of 61%.
For construction fugitive dust sources, 20.8% of the PM_{10} would be $PM_{2.5}$.

Summary of Operation Emissions Output from URBEMIS2007

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TOTALS (lbs/day, mitigated)

Percent Reduction	NaN	NaN	NaN	NaN	NaN	NaN	NaN

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.93	3.50	24.11	0.03	5.31	1.03	2,837.23

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	3.93	3.50	24.11	0.03	5.31	1.03	2,837.23

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

NaN = Not applicable because mitigation would not be required for operation of the project
Operation of the project would not include area sources, such as landscaping, therefore only vehicle emissions were estimated for the project.

Appendix C
Biological Resources Technical Report

Alpine Solar — 35-Acre Project Biological Resources Technical Report

Prepared for

NRG Solar Alpine LLC

5790 Fleet Street, Suite 200
Carlsbad, CA 92008

June 2011

CH2MHILL®

222 East Carrillo Street
Suite 207
Santa Barbara, CA 93101

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AC	alternating current
ASP	Alpine Solar Project
CBOC	California Burrowing Owl Consortium
CDFG	California Department of Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CUP	Conditional Use Permit
GPS	Global Positioning System
m	meter(s)
mph	miles per hour
MW	megawatt(s)
NRCS	Natural Resource Conservation Service
NRG	NRG Solar Alpine LLC
PV	photovoltaic
SR	State Route
U.S.	United States
USFWS	United States Fish and Wildlife Service
WBWG	Western Bat Working Group
WRCC	Western Region Climate Center

1. Introduction

NRG Solar Alpine LLC (NRG) obtained a Conditional Use Permit (CUP) for the Alpine Solar Project (ASP) from Los Angeles County on March 30, 2011. The permit (CUP Number 200900158, Project Number R2009-02089-[5]) is to construct, own, and operate a renewable energy project providing electricity generated from clean solar technology. The approved ASP consists of a nominal 92-megawatt (MW) alternating current (AC) solar photovoltaic (PV) generating facility located on approximately 580 acres of developable area on the 800-acre ASP site in northern Los Angeles County (see Figure 1).

To allow for the optimization of the recently approved Alpine Solar Project (Los Angeles County CUP Number 200900158, Project Number R2009-02089-(5), March 30, 2011) as a photovoltaic generating facility, NRG Solar Alpine LLC proposes to include two additional parcels (35 acres total) located adjacent to the larger approved ASP area, resulting in a total of 835 acres for the combined ASP site. The two new parcels are proposed to be used for the placement of solar PV modules and related support facilities; however, the combined Project will continue to consist of a nominal 92 MWs of PV generation. The two additional parcels (35 acres total [the "Alpine Solar — 35-Acre Project" or "Project"] see Figure 2) are located adjacent to the larger approved ASP area (collectively known as the "Combined Project"). The two new parcels are proposed to be used for the placement of solar PV modules and related support facilities; however, the Combined Project will continue to consist of a nominal 92 MW of PV generation.

The purpose of this report is to provide a qualitative analysis of potential impacts to biological resources from development of the Project. This report provides a description of the study area, the methodology used to conduct special-status wildlife and plant species surveys, and the results of the surveys. Suggested mitigation measures to reduce potential impacts are also included.

2. Previous Biological Survey Efforts

The ASP has been the subject of several biological surveys for both wildlife and plant special-status species. This section provides an overview of these previous survey efforts. Based on review of available public databases (e.g., California Natural Diversity Database [CNDDB]) for both special-status wildlife and plant species, rare plant and burrowing owl (*Athene cunicularia*) protocol surveys were conducted to determine presence.

Protocol rare plant surveys were conducted in May 2010 with the goal of locating and mapping all individuals of special-status plants throughout the Project area. These surveys were floristic in nature and followed the U.S. Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS Guidelines) (USFWS, 1996). Vegetation types were identified during reconnaissance visits and were confirmed during protocol-level surveys. No special-status plants were found within the extent of the ASP and within a 250-foot buffer of all Project features. The results of the 2010 rare plant survey were included in the Botanical Resources Technical Report (CH2M HILL, 2010), which is included as Appendix A.

Protocol burrowing owl surveys were conducted of the ASP and a 150-meter buffer in May 2010 and yielded positive results. To address potential impacts to burrowing owl, Bloom Biological Incorporated developed a burrowing owl management plan that received concurrence from the California Department of Fish and Game (CDFG) in March 2011. The burrowing owl management plan has been filed with Los Angeles County, consistent with the Planning Commission conditions of approval for the ASP. The burrowing owl technical report is included as Appendix B; the burrowing owl management plan is included as Appendix C.

The rare plant and burrowing owl surveys of the ASP, including the required buffer areas, covered all but 7.5 acres of the Project site. Additional protocol surveys occurred in 2011 to address this area, the results of which are provided in the following sections (shown in Figure 4):

- Vegetation and rare plant survey of 7.5 acres of Project site not previously surveyed (April 26, 2011)
- Phase II burrowing owl protocol surveys for the Project site and 150-meter buffer area (April 18, 2011 and May 18, 2011)
- Special-status species assessment (general reconnaissance for plant and wildlife) for the Project site and ASP (Western Parcel) on April 18, 2011, April 26, 2011, and May 18, 2011.

3. Study Area

The Combined Project site is located in a rural area of the Antelope Valley in the northern portion of Los Angeles County. The Combined Project is located within the area considered a part of the Fairmont rural community. Other nearby rural residential communities are Neenach, located approximately 3 miles from the western boundary of the Project site, and Antelope Acres, located approximately 10 miles from the eastern boundary of the Project site. The largest communities in the vicinity of the Project site include Rosamond, approximately 18 miles to the northeast, and Lancaster, approximately 20 miles to the southeast. Recreational opportunities in the area include the Los Angeles County Desert Pines Wildlife Sanctuary approximately 4 miles to the south, the Arthur B. Ripley Desert Woodland State Park approximately 3 miles to the south, and the Antelope Valley Poppy Preserve State Park approximately 7 miles to the southeast. Major transportation facilities include State Route (SR) 14 (north-south); SR 138/Avenue D (east-west); and several public, private, and military airports. The Combined Project site is bounded by Avenue C on the south, Avenue B on the north, 220th Street West on the west, and 200th Street West on the east. The Project location is depicted in Figure 1. The Project site is shown in Figure 2.

3.1 Environmental Setting

The Project site is characterized by disturbed, undeveloped land with varying degrees of previous disturbance. Based upon historic photographs and discussions with a previous agricultural tenant, agricultural activities previously occurred on the Project site, including active carrot production as recently as 2008. Agricultural activities have ceased and the land has been fallow long enough to be colonized by native and non-native vegetation types. The most abundant plant community on the Project site is rabbitbrush scrub, a disturbance-maintained community; which grades into non-native grassland/ruderal habitat toward the western and northwestern portions of the Project site.

The local climate is dry, with rainfall averaging less than 10 inches per year (Western Region Climate Center [WRCC], 2011), and there are no natural perennial surface waters in the region. The prevailing wind is in an easterly direction, with a mean speed of 5.5 miles per hour (mph). Ambient temperatures vary from below freezing to low 100 degrees Fahrenheit (°F), according to historic records from the Neenach weather station, which is approximately 4.2 miles from the Project site (WRCC, 2011).

Mapped soil units on the Project site include Greenfield sandy loam, Vernalis loam, and Hanford coarse sandy loam (Natural Resource Conservation Service [NRCS], 2011; see Figure 3). These soil types are associated with deep, well drained soils on alluvial fans or flood plains, and are consistent with those on the ASP.

4. Rare Plants and Vegetation Communities

This section provides an overview of the rare plant protocol survey and vegetation community mapping on the Project site, and describes the results of the survey.

4.1 Pre-field Preparations

Pre-field research was conducted to select special-status plant species with potential to be found within the Project area. For this Project, the Project area vicinity includes the Antelope Valley and adjacent areas with similar habitats. For each potentially occurring species, information was compiled on conservation status, distribution, habitat characteristics, blooming time, presence in the Project region, and other information used in field identification.

A plant species was considered to be of special-status if it met one or more of the following criteria:

- Federally listed, proposed, or a candidate for listing as threatened or endangered (CDFG, 2011a; CDFG, 2011b)
- State listed, proposed, or a candidate for listing as threatened or endangered (CDFG, 2011c; CDFG, 2011d)
- California Native Plant Society (CNPS) designated species (CNPS, 2011)

A species was determined to have potential to occur within the Project area if its known or expected geographic range occurs in the vicinity or within the Project area, and if its known or expected habitat is found within or near the Project area. For this Project, the Project area vicinity includes the Antelope Valley and adjacent areas with similar habitats.

As part of the ASP, the CDFG South Coast Region 5 office was contacted in February 2008 for a list of threatened, endangered, and other special-status species potentially present in the Project study area. The South Coast Region 5 office responded on April 7, 2008 (see Appendix A). The CDFG recommended a search of CNDDB to determine if special-status species could occur in the Project area. The CNDDB was consulted for documented occurrences of special-status species within the Project boundary and a 10-mile buffer of the site (CNDDB, 2011). An updated CNDDB query was also run for the Project site, including a 10-mile radius (Appendix D).

As part of the ASP, the USFWS office in Ventura, California was contacted in February 2008 for a list of threatened, endangered, and other special-status species potentially present in the Project study area. The USFWS responded on April 18, 2008. Based on a review of records and the proposed Project location, the USFWS does not believe that the site could support any listed, proposed, or candidate species for which the USFWS is responsible (see Appendix A). The USFWS online species list for Los Angeles County was reviewed for federally listed, candidate, and proposed species that potentially occur on the site or in the

Project vicinity. The species list for eastern Kern County was also reviewed, as the Project is located near the Los Angeles County-Kern County border.

A search of the CNPS online inventory was conducted to identify additional special-status plant species with potential to occur on the site. Table 1 provides a list of plant species identified during the information review.

TABLE 1
Special-Status Plant Species that May Occur in the Project Area

Common Name	Scientific Name	Habitat Preference Distribution and Range	Federal[a]	State	CNPS	Habitat Present
Darwin rock-cress	*Arabis pulchra var. munciensis*	Chenopod scrub and Mojavean desert scrub on limestone at elevations of 1,100 to 2,075 meters (m).Nearest recorded occurrence was approximately 2.0 miles south-southwest of the Project site.	-	-	2.3	Yes
Braunton's milk-vetch	*Astragalus brauntonii*	Chaparral, coastal sage scrub, valley and foothill grassland, recent burns or disturbed areas, usually sandstone with carbonate layers; at elevations of 4 to 640 m. No recorded occurrences within 10 miles of the Project site.	E	-	1B.1	Yes
Nevin's barberry	*Mahonia nevinii*	Chaparral, cismontane woodland, coastal sage scrub, riparian scrub in sandy or gravelly soils; at elevations of 274 to 825 m. No recorded occurrences within 10 miles of the Project site.	E	E	1B.1	No
Round-leaved filaree	*Erodium macrophyllum var. macrophyllum*	Found in clay soils in cismontane woodland, valley and foothill grasslands; at elevations of 15 to 1,200 m. Nearest recorded occurrences are 8.7 and 9.3 miles east of the Project site.	-	-	1B.1	No
Slender mariposa-lily	*Calochortus clavatus var. gracilis*	Chaparral, coastal scrub, valley and foothill grassland; 320 to 1,000 m. No recorded occurrences within 10 miles of the Project site.	-	-	1B.2	No
Pierson's morning-glory	*Calystegia peirsonii*	Found in chaparral coastal scrub, chenopod scrub, cismontane woodland, and lower montane coniferous forest. Often in disturbed areas or along roadsides or in grassy, open areas 390 to 1,470 m. Open areas along roads, exposed rocky soils and on steep cliffs. Multiple occurrences have been recorded; this species located approximately 6 to 7.8 miles south and southeast of the Project site.	-	-	4.2	No
San Fernando Valley spineflower	*Chorizanthe parryi var. fernandina*	Found on sandy soils in coastal sage scrub habitat on sandy banks and along dry washes; 3 to 1,035 m. Nearest recorded occurrence was approximately 9.3 miles southeast of the Project site.	SC	E	1B.1	No
Clokey's cryptantha	*Cryptantha clokeyi*	Mojavean desert scrub; 800 to 1,280 m. Nearest recorded occurrence was approximately 6 miles southeast of the Project site.	-	-	1B.1	Yes
Slender-horned spineflower	*Dodecahema leptoceras*	Chaparral, cismontane woodland, coastal sage scrub on alluvial fans/sandy soils; at elevations of 200 to 760 m. No recorded occurrences within 10 miles of the Project site.	E	E	1B.1	No
Conejo dudleya	*Dudleya abramsii ssp. parva*	Found in coastal sage scrub, valley and foothill grasslands, in rocky or gravelly, clay or volcanic soils; at elevations of 60 to 450 m. No recorded occurrences within 10 miles of the Project site.	T	-	1B.2	No

TABLE 1
Special-Status Plant Species that May Occur in the Project Area

Common Name	Scientific Name	Habitat Preference Distribution and Range	Federal[a]	State	CNPS	Habitat Present
Marcescent dudleya	*Dudleya cymosa ssp. marcescens*	Found in chaparral in volcanic or rocky soils; at elevations of 150 to 520 m. No recorded occurrences within 10 miles of the Project site.	T	T	1B.2	No
Santa Monica Mountains live-forever	*Dudleya cymosa ssp. ovatifolia*	Chaparral, coastal sage scrub, in volcanic or sedimentary, rocky soils; at elevations of 150 to 1,675 m. No recorded occurrences within 10 miles of the Project site.	T	-	1B.2	No
Verity's dudleya	*Dudleya verity*	Chaparral, cismontane woodland, and coastal sage scrub in volcanic, rocky soils; at elevations of 60 to 120 m. No recorded occurrences within 10 miles of the Project site.	T	-	1B.2	No
Delicate bluecup	*Githopsis tenella*	Chaparral, cismontane woodland in mesic soils; at elevations of 1,100 to 1,900 m.	-	-	1B.3	No
Madera linanthus	*Leptosiphon serrulatus*	Dry slopes, often on decomposed granite in cismontane woodland, lower montane coniferous woodland; at elevations of 300 to 1,300 m. Nearest recorded occurrence was approximately 9.2 miles northeast of the Project site.	-	-	1B.2	No
Short-joint beavertail	*Opuntia basilaris var. brachyclada*	Found in chaparral, Joshua tree woodland, Mojave Desert scrub, and pinyon-juniper woodland communities at elevations of 425 to 1,800 m. No recorded occurrences within 10 miles of the Project site.	-	-	1B.2	Yes
Spreading navarretia	*Navarretia fossalis*	Chenopod scrub, marshes and swamps, playas, vernal pools; at elevations of 30 to 1,300 m. No recorded occurrences within 10 miles of the Project site.	T	-	1B.1	No
California Orcutt grass	*Orcuttia californica*	Vernal pools; 15 to 660 m. No recorded occurrences within 10 miles of the Project site.	E	E	1B.1	No
Lyon's pentachaeta	*Pentachaeta lyonii*	Chaparral, coastal sage scrub, valley and foothill grasslands in rocky and clay soils; at elevations of 30 to 630 m.	E	E	1B.1	No
Greata's aster	*Symphyotrichum greatae*	Found in chaparral, cismontane woodland, mesic canyons, riparian woodlands at elevations of 800 to 1,500 m. No recorded occurrences within 10 miles of the Project site.	-	-	1B.3	No

Notes:
[a]- Key to status designations

Federal Designations:

(E) Endangered, (T) Threatened, (PE) Proposed Endangered, (PT) Proposed Threatened, (SC) Species of Concern, (C) Candidate, (D) Delisted

State Designations:

(E) Endangered, (T) Threatened, (R) Rare, (SSC) California Species of Special Concern, (FP) Fully Protected Species

[b]- Distance from the centroid of each CNDDB occurrence. See CNDDB for detailed information regarding sources and locations.

CNPS

(1A) Presumed extinct in California, (1B) Rare or endangered in California or elsewhere, (2.) Rare or endangered in California, more common elsewhere, (3.) Plants for which we need more information – Review list, (4.) Plants of limited distribution – Watch list. Threat ranks: (.1) Seriously endangered in California, (.2) Fairly endangered in California, (.3) Not very endangered in California.

The full list above includes those species that initially were considered to have the potential to occur within the Project area, but after additional data and site review, are not expected to occur because no suitable habitat is known to occur within the Project area, or no known locations have been identified within the vicinity of the Project area. These species are retained as "not expected to occur" due to lack of suitable habitat.

4.2 Field Survey Methodology

The vegetation and rare plant survey was conducted within a 7.5-acre survey area on April 26, 2011. This survey area represents areas not previously surveyed for rare plants as part of the ASP. During the survey, vegetation communities were identified and characterized by species, and photographs of the site were taken. Additionally, as a follow-up to previous surveys of the ASP, reconnaissance-level vegetation assessments were conducted on the Western Parcel of the ASP on April 18, 2011, April 26, 2011 and May 18, 2011. Conditions on the ASP remain generally as described in the Botanical Resources Technical Report (CH2M HILL, 2010), which is included as Appendix A, with the notable exception that vegetation has continued to increase in height.

The goal of this survey was to census, map, photograph, and record habitat data for every special-status plant location, if observed. Surveys were floristic, meaning that all plants were identified to the level needed to determine whether they were special-status species. Surveys were completed in late April 2011, at a time when potentially occurring special-status plants with moderate to high likelihood of occurrence, and most species with low to very low likelihood of occurrence, would be identifiable from flowers or distinctive vegetative features. Rainfall within the Project area preceding the survey was likely above average and occurred throughout the rainy season, based on the abundance and size of the common and typical annual plant species that were observed. Special-status plant surveys met the recommendations of the USFWS botanical survey guidelines (USFWS, 1996).

The survey was completed by walking transects at 50-foot intervals within the 7.5-acre survey area to search for special-status plants. The 50-foot interval spacing increased the likelihood of detecting small, cryptically colored special-status plants.

Transect lines were printed on paper maps and included in background files on the Trimble GeoXT Global Positioning System (GPS) unit that was used to navigate and collect data in the field. Habitat data were recorded in field notes. Weather conditions during the special-status species assessment and rare plant survey included temperatures ranging between 48°F and 66°F, winds ranging between 8 and 18 mph, and sunny skies with no cloud cover.

4.3 Vegetation Classification Methodology

The principle references used in naming and classifying the vegetation of the Project area include *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986) and *A Manual of California Vegetation* (Sawyer et al., 2009).

Project-specific descriptions of vegetation types, based on observations of dominant species and habitat characteristics, were developed during the vegetation and rare plant survey. Descriptions are provided in Section 4.4

A list of all plant species observed within the Project site during the plant survey is provided in Appendix E. Representative photographs are presented in Appendix F.

4.4 Vegetation Types

This section describes the vegetation types located on the Project site.

4.4.1 Rabbitbrush Scrub

The most abundant plant community on the Project site is rabbitbrush scrub (Sawyer et al., 2009; Holland, 1986), dominated by rubber rabbitbrush (*Ericameria nauseosus*) and scattered goldenbush (*Ericameria linearifolia*). This community is a disturbance-maintained community (Sawyer et al., 2009; Holland, 1996). Rabbitbrush scrub is a plant community that results from prior land use disturbance and contains both native and non-native habitat elements. Soils are typically coarse to fine sand, usually well drained, and moderately acidic to slightly saline (Sawyer et al., 2009). Observed native herbaceous understory species included goldfields (*Lasthenia californica*), California poppy (*Eschscholtzia californica*), chick lupine (*Lupinus microcarpus*), and desert dandelion (M*alacothrix californica var. glabrata*). Common non-native species observed included red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*), and filaree (*Erodium sp.*).

4.4.2 Non-Native Grassland

Rabbitbrush scrub grades into non-native grassland/ruderal habitat with varying degrees of disturbance toward the western and northwestern portions of the Project site. It is likely that these areas had previously been in agricultural production, but have been fallow long enough to be colonized by herbaceous species, but not long enough to support shrub species. This area is dominated by ruderal species including cheatgrass, red brome, rip-gut brome (*Bromus diandrus*), Russian thistle (*Salsola tragus*), bristly fiddleneck (*Amsinkia tessellata*), red-stem filaree (*Erodium cicutarium*), London rocket *(Sisimbrium ireo*), tumble mustard, and foxtail barley (*Hordeum jubatum*). Native species occurring in much less numbers include chick lupine, desert dandelion, and evening primrose (*Oenothera deltoides*).

4.5 Abundance and Distribution within the Project Area

The Project site provides suitable or marginal habitat for four special-status plant species: Darwin rock-cress (*Arabis pulchra* var. *munciensis*), Braunton's milk-vetch (*Astragalus brauntonii*), Clokey's cryptantha (*Cryptantha clokeyi*), and short-joint beavertail (*Opuntia basilaris* var. *brachyclada*). Botanical surveys of the Project site were conducted in April 2011. A total of 26 genera representing 13 different plant families were observed at the Project site during the April 2011 botanical surveys. A total of 34 species were observed at the Project site; of these, 23 are native and 11 are non-native. No special-status plants were found within the survey area.

4.5.1 Joshua Tree (*Yucca brevifolia*)

Joshua tree woodland is considered sensitive by resource agencies because of its scarcity and support of a number of state and federally listed endangered, threatened, and rare vascular

plants, as well as several sensitive bird and reptile species (PCR Services Corporation, 2006). Individual Joshua trees are not considered a special-status species and no permit is required by Los Angeles County for their removal.

The Project site contains one Joshua tree on the southeastern corner adjacent to 210th Street West. It will be located outside the fence line of the solar facility. Best management practices will be implemented during construction to avoid impacts to the tree.

5. Wildlife Assessment

This section provides an overview of the wildlife assessment of the Combined Project site and describes the survey results.

5.1 Pre-field Preparations

Pre-field research was conducted to select special-status wildlife species with potential to be found within the Project area. For each potentially occurring species, information was compiled on conservation status, distribution, habitat characteristics, presence in the Project region, and other information used in field identification.

A wildlife species was considered to be of special-status if it met one or more of the following criteria:

- Federally listed, proposed, or a candidate for listing as threatened or endangered (CDFG, 2011a; CDFG, 2011b)
- State listed, proposed, or a candidate for listing as threatened or endangered (CDFG, 2011c; CDFG, 2011d)

A species was determined to have potential to occur within the Project area if its known or expected geographic range occurs in the vicinity or within the Project area, and if its known or expected habitat is found within or near the Project area. For this Project, the Project area vicinity includes the Antelope Valley and adjacent areas with similar habitats.

USFWS and CDFG were contacted for a list of special-status wildlife species occurring in the area. Table 2 provides a list of wildlife species identified during the information review.

TABLE 2
Special-Status Wildlife Species that May Occur in the Project Area

Species	Status[a] (Federal/State/ WBWG)	Potential for Occurrence in Project Area	Nearest Identified Occurrence[b]	Habitat Requirements
Reptiles				
Desert tortoise *Gopherus agassizii*	**FT/ST/---**	Low potential to occur; lack of suitable habitat present throughout the Project site.	Recorded observation for desert tortoise was 15.9 miles from the Project site.	Occurs in a wide variety of desert habitat, but is most common in desert scrub, desert wash, and Joshua tree habitats. Requires friable soils for burrow and nest construction.
Coast horned lizard *Phrynosoma blainvillii*	**---/SSC/---**	Low to moderate potential to occur; however, not many open, sandy areas are present within the Project site.	Species have been documented in multiple locations, approximately 4.8 to 9 miles southwest of the Project site.	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scatted low-growing shrubs. Prefers open areas for sunning, shrubs for cover, patches of loose soil for burial, and an abundant supply of ants and other insects.

TABLE 2
Special-Status Wildlife Species that May Occur in the Project Area

Species	Status[a] (Federal/State/ WBWG)	Potential for Occurrence in Project Area	Nearest Identified Occurrence[b]	Habitat Requirements
Birds				
California condor *Gymnogyps californianus*	FE/SE/---	No nesting habitat onsite. Marginal foraging habitat in vicinity. Potential to move through the area during seasonal movements.	No CNDDB occurrences within 10 miles. Species thought to move north in nonbreeding season into Kern and Tulare Counties, then return to the Tehachapi Mountains and further south during winter season.	Requires vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting habitat, and can forage up to 100 miles from roost/nest location. Project location is not within Critical Habitat for this species.
Golden eagle *Aquila chrysaetos*	**---/FP/---**	No nesting habitat onsite. However, potential foraging habitat present.	No CNDDB occurrences within 10 miles, but known to occur in the vicinity.	Uncommon resident that forages over grassland and broken chaparral or sage scrub. Nests on high cliffs. Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert.
Swainson's hawk *Buteo swainsoni*	**---/ST/---**	No nesting habitat onsite. However, potential foraging habitat present.	No CNDDB occurrences within 10 miles, but known to occur in the vicinity.	Nests in stands with few trees in juniper-sage flats, riparian areas, and oak savannah. Requires areas with suitable foraging such as grasslands, alfalfa, or grain fields that support rodent populations.
Ferruginous hawk *Buteo regalis*	**---/WL/---**	Outside of breeding range. However, potential foraging habitat for overwintering individuals present.	No CNDDB occurrences within 10 miles, but known to occur in the vicinity.	Inhabits sagebrush/ shrub-steppe, grassland, mixed shrub/grassland, in lone trees or sparse groves primarily in (but not restricted to) the pinyon-juniper ecotone, and in the transition zone between woodland and shrub or grassland habitats.
Prairie falcon *Falco mexicanus*	**--/WL/---**	No nesting habitat is present within the Project area; however, potential foraging habitat is present.	Species occurrences within 7.4 miles southwest of the Project site.	Inhabits dry, open terrain, either level or hilly. Nests in cliffs and forages far afield, even to marshlands and ocean shores.
Mountain plover *Charadrius montanus*	**---/SSC/---**	Low to moderate potential to occur in rabbitbrush scrub. Not expected to occur within the non-native grassland as the vegetation is too dense and lacks open areas.	Twenty-four wintering individuals were observed 3 miles northwest of Antelope Acres, approximately 8.9 miles west of the Project site.	Nests and forages in short grasslands, freshly plowed fields, newly sprouted fields and sometimes found in sod farms. Prefers grazed areas and areas with burrowing rodents.

TABLE 2
Special-Status Wildlife Species that May Occur in the Project Area

Species	Status[a] (Federal/State/ WBWG)	Potential for Occurrence in Project Area	Nearest Identified Occurrence[b]	Habitat Requirements
Burrowing owl *Athene cunicularia*	**---/SSC/---**	Potential to occur in ruderal, disturbed areas and more open areas within the scrub habitat.	Multiple occurrences have been recorded within 10 miles of the Project site, including 5 adults and 4 juveniles observed near Neenach Substation. Range of observations is from 0 to 9.5 miles from the Project site.	Nests and forages in dry, open areas such as shortgrass prairies, pastures, hayfields, and fallow fields. Urban habitats include right-of-ways (ROWs) for roads and railways, irrigation ditches, airports, university campuses, and vacant dirt lots. Low vegetation cover and mammal burrows are essential.
Loggerhead shrike *Lanius ludovicianus*	---/SSC/---	Potential for nesting and foraging.	No CNDDB occurrences within 10 miles. However, this species was observed onsite.	Occurs in a variety of habitat types. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
California horned lark *Eremophila alpestris actia*	--/WL/---	Potential for nesting and foraging.	No CNDDB occurrences within 10 miles. However, this species was observed onsite.	Occurs in a variety of open habitats including grasslands, open coastal plains, fallow grain fields, and alkali flats.
Le Conte's thrasher *Toxostoma lecontei*	**---/SSC/---**	Potential to occur in ruderal, disturbed areas and more open areas within the scrub habitat.	Le Conte's thrashers were observed 5 miles west of Willow Springs, approximately 9 miles northwest of the Project site.	A desert resident most often found in open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitat. Commonly nests in dense, spiny shrubs or densely branched cactus in desert wash habitat.
Tricolored blackbird *Agelaius tricolor*	**---/SSC/---**	Low to moderate potential to forage within the Project site; known to forage in fields and farms.	Observed approximately 3.7 miles west-northwest of the Project site along the shore of Holiday Lake.	Highly colonial species, largely endemic to California. Requires open water, protected nesting substrate and foraging area within a few kilometers of the colony. Commonly nests in cattail or tule marshes, while foraging in fields and farms.

TABLE 2
Special-Status Wildlife Species that May Occur in the Project Area

Species	Status[a] (Federal/State/ WBWG)	Potential for Occurrence in Project Area	Nearest Identified Occurrence[b]	Habitat Requirements
Mammals				
Mohave ground squirrel *Spermophilus mohavensis*	**---/ST/---**	Low potential to occur; lack of suitable habitat present.	Closest record occurrence is approximately 16.9 miles south of the Project site.	Restricted to the Mojave desert. Occurs in open desert scrub, alkali scrub, and Joshua tree woodlands. Also feeds in annual grasslands. Prefers sandy to gravelly soils, and avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.
Tehachapi pocket mouse *Perognathus alticola inexpectatus*	**---/SSC/---**	Low to moderate potential to occur; suitable habitat and soils present.	Approximately 7.6 miles west and 9 miles southeast of the Project site.	Arid annual grassland and desert shrub communities, but also found in fallow grain fields and in disturbed habitat including Russian thistle. Forages on open ground and under shrubs.
Hoary bat *Lasiurus cinereus*	**---/---/M**	Low to moderate potential to occur; suitable foraging habitat is present.	Species has been documented approximately 7.6 miles southeast of the Project site.	Occurs in hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Diet almost exclusively composed of arthropods; therefore, needs abundant supply of insects.
American badger *Taxidea taxus*	**---/SSC/---**	Low potential to occur; suitable habitat present.	Species has been documented 3.4 miles northeast, 4.8 miles southeast, and 7.5 miles southeast of the Project sites.	Most abundant in drier open stages of many shrub, forest, and herbaceous habitats. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents.

Notes:
[a]- Key to status designations

Federal Designations:

(FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed Endangered, (FPT) Federally Proposed Threatened, (FC) Candidate, (FD) Delisted

State Designations:

(SE) State Endangered, (ST) State Threatened, (SR) State Rare, (SSC) California Species of Special Concern, (CFP) Fully Protected Species, (WL) Watch List

Western Bat Working Group (WBWG):

(H) High Priority, (MH) Medium-high Priority, (M) Medium Priority, (LW) Low-medium Priority

[b]- Distance from the centroid of each CNDDB occurrence. See CNDDB for detailed information regarding sources and locations.

5.1.1 Critical Habitat

Table 3 is a list of the 16 critical habitat designations in Los Angeles County as shown on the USFWS Critical Habitat Portal (USFWS, 2011). Only those final critical habitat designations that have been digitized and submitted to the system are available on the interactive Web site.

The Project site does not fall within any critical habitat designation. The nearest critical habitat designation is related to the California condor, located approximately 8 miles north.

TABLE 3
USFWS Critical Habitats in Los Angeles County, California

Plants	Wildlife
Thread-leaved brodiaea	Palos Verdes blue butterfly
Braunton's milk-vetch	Steelhead
Spreading navarretia	Santa Ana sucker
Lyon's pentachaeta	Tidewater goby
	Arroyo toad
	California red-legged frog
	Mountain yellow-legged frog
	Desert tortoise
	California condor
	Western snowy plover
	Coastal California Gnatcatcher
	Least Bell's vireo

5.1.2 Abundance and Distribution within the Project Area

A total of 17 special-status wildlife species were evaluated based on species distribution (Table 2). Five of the 17 species have the potential to occur onsite; the five species are coast horned lizard (*Phrynosoma blainvillii*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), California horned lark (*Eremophila alpestris actia*), and Le Conte's thrasher (*Toxostoma lecontei).* Survey guidelines are only available for burrowing owl (described in Section 6).

The Project site provides suitable to marginal foraging habitat for five special-status bird species including: golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*) (wintering), Swainson's hawk (*Buteo swainsoni*), prairie falcon (*Falco mexicanus*), and tri-colored blackbird (*Agelaius tricolor*); none of these species are expected to nest onsite. Golden eagle has been observed perched near the Project site.

California condor *(Gymnogyps californianus)*, a federal and state endangered species, may move through the area during seasonal movements. This species is thought to travel northward into Kern and Tulare Counties during the nonbreeding season, then return to the Tehachapi Mountains and farther south during the winter.

5.2 Field Survey Methodology

The special-status wildlife assessment was conducted within the 35-acre Project site on April 26, 2011. Additionally, as a follow-up to previous surveys of the ASP, reconnaissance-level wildlife assessments were conducted on the Western Parcel of the ASP on April 18, 2011, April 26, 2011 and May 18, 2011. The goal of this survey was re-affirm previous survey results and to assess the Project site for special-status wildlife species and to identify and

map any special-status wildlife, if observed. Field crews walked meandering transects through all habitat types and covered the entire Combined Project site. Transect lines and Project boundaries were printed on paper maps and included in background files on the Trimble GeoXT GPS unit that was used to navigate and take data in the field.

5.3 Survey Results

A total of 10 species were observed on the Project site, of which 2 are special-status species (refer to Appendix G). The loggerhead shrike is a California Species of Special Concern. The California horned lark is on the California Watch List. The loggerhead shrike and California horned lark receive the same level of protection as any other species under the Migratory Bird Treaty Act. They do not require special treatment under CDFG requirements. Although previously observed on the ASP, no burrowing owl or evidence thereof was noted onsite (see Section 6.3).

6. Burrowing Owl

This section provides information on the burrowing owl (*Athene cunicularia*), protocol survey methodology, and results. As noted in Section 2 of this report, burrowing owls were observed on the ASP in 2010 during protocol surveys (Phoenix, 2010). A management plan has been developed with CDFG concurrence to minimize any potential impacts to burrowing owl as a result of ASP implementation (Bloom, 2011).

6.1 Description of the Burrowing Owl

The burrowing owl is a small, long-legged and mostly terrestrial owl occurring primarily in open, dry grassland and desert habitats. In California, this species was formerly common in appropriate habitats throughout the state at elevations as high as 5,300 feet (1,600 m); however, this species has declined in numbers markedly throughout the state in recent decades (Bloom, 2011). A state Species of Special Concern, this species is protected in the state of California from direct take (killing, injuring, or causing failure of an active nesting effort) by both the federal Migratory Bird Treaty Act and the California Fish and Game Code Sections 3503.5 and 3800.

6.2 Field Survey Methodology

Phase II protocol surveys were conducted on April 18, 2011, and May 18, 2011, for the detection of burrowing owls, burrowing owl habitat, and/or suitable burrowing owl burrows. In accordance with recommended survey protocols (California Burrowing Owl Consortium [CBOC], 1993), 30-m transects were walked within the Project site and a 150-m buffer of the survey area, the total acreage surveyed was 52.2 acres. Starting in the northwest corner, transects were walked in an east-to-west fashion ending in the southeast corner. The first step in the survey process was to assess for the presence of suitable burrowing owl habitat based on habitat descriptions described in the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC, 1993). Data were recorded using Trimble Geo XT GPS units running TerraSync (3.21) software.

6.3 Survey Results

There were six fossorial burrows noted that could potentially be utilized by burrowing owl; however, there was no evidence (prey remains, pellets, whitewash, or feathers) that indicated past or current use by burrowing owl. The Project site does not contain suitable burrowing owl habitat.

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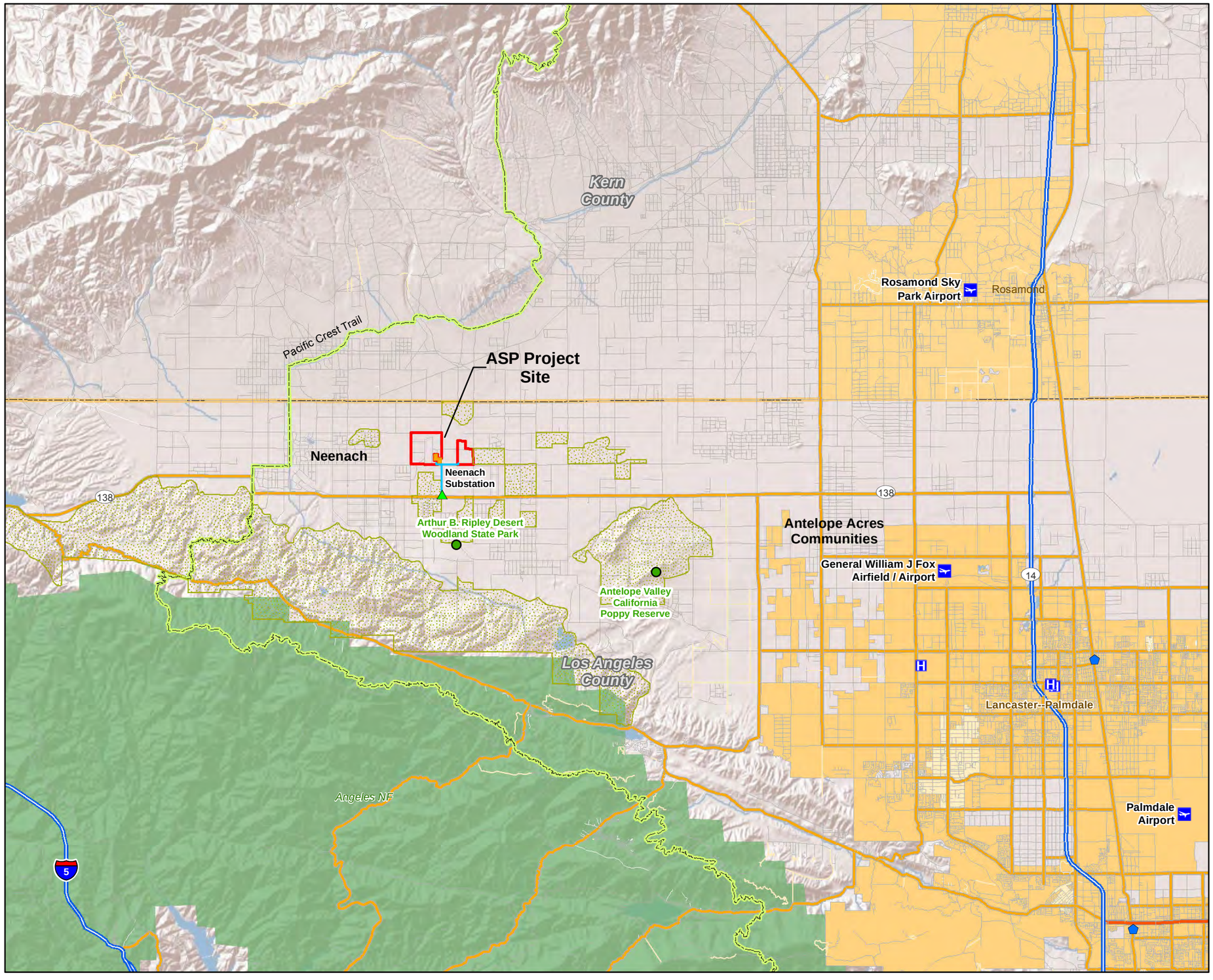
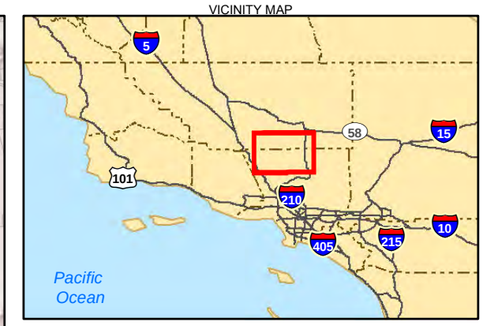
Figures





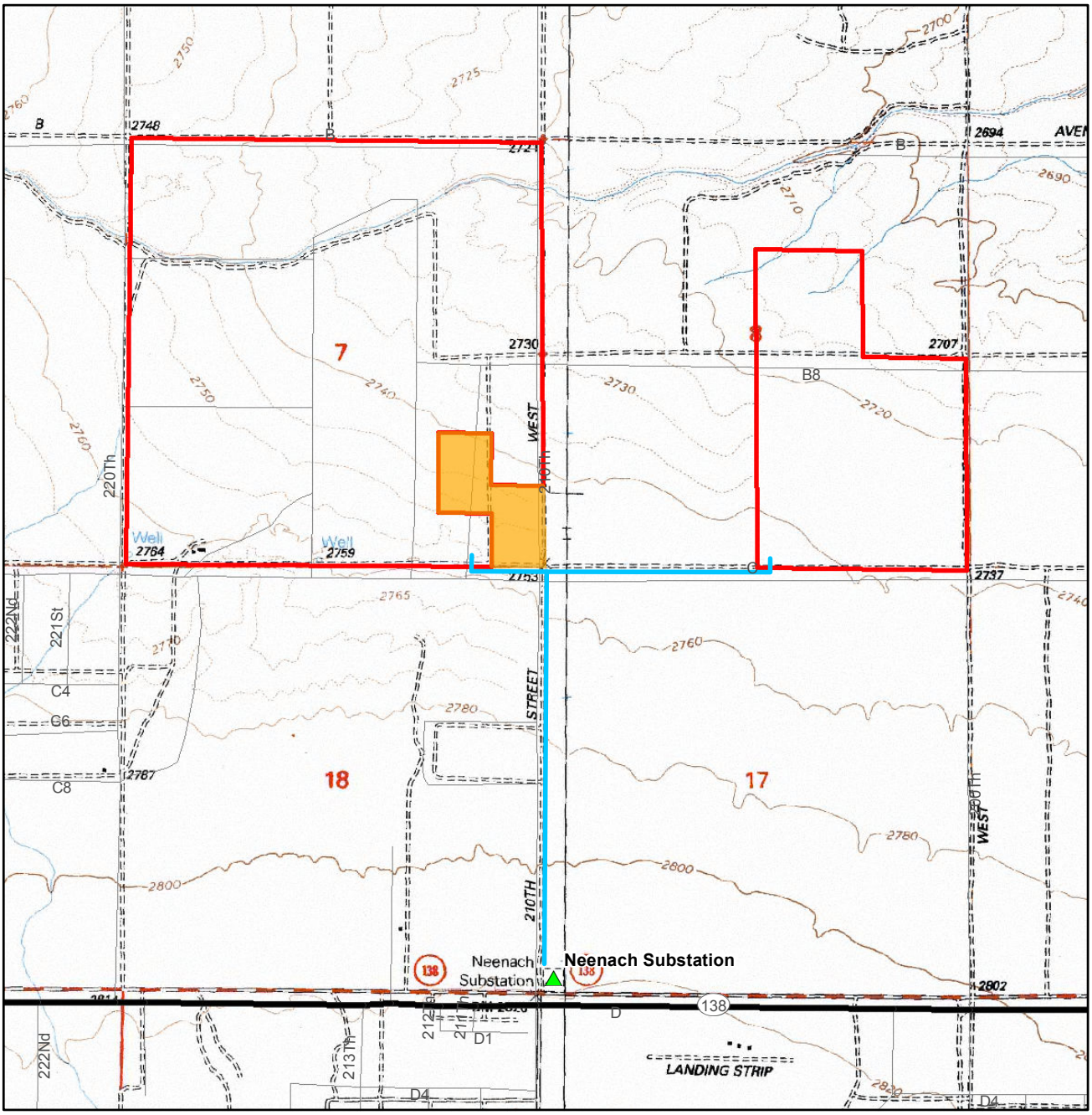
LEGEND

- Existing Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Airports
- Hospital
- Sheriff Station
- Schools
- Pacific Crest Trail
- Major Faults
- Los Angeles County Significant Ecological Ares

N

0 3.75
Miles

FIGURE 1
Regional Overview
Alpine Solar Project
June 2011



LEGEND

- Substation
- Alpine Solar Project – Gen-tie Route (66 kV)
- Alpine Solar Project – Western and Eastern Parcels
- Alpine Solar – 35-Acre Project
- Major Road
- Local Road

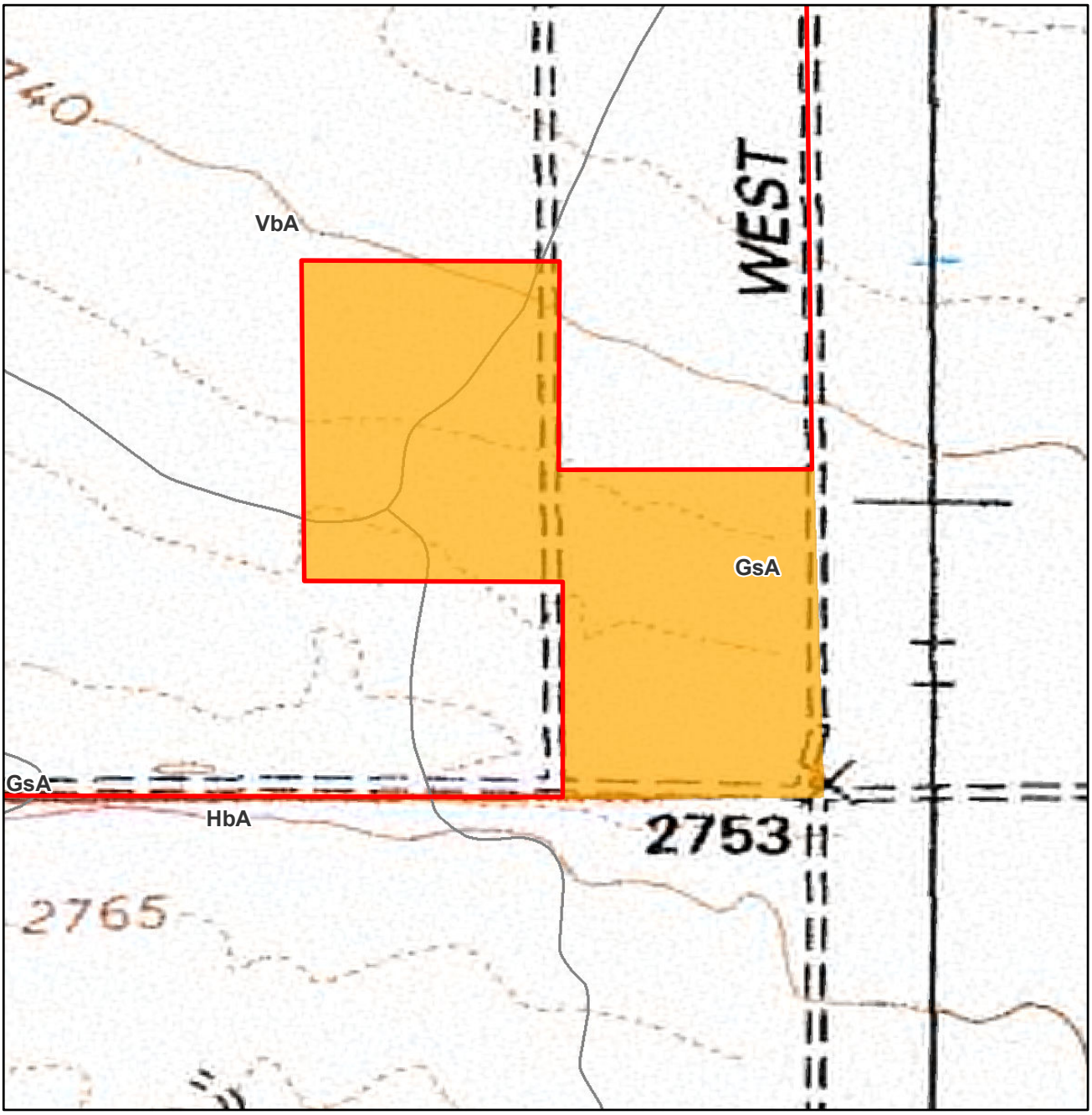
VICINITY MAP

N

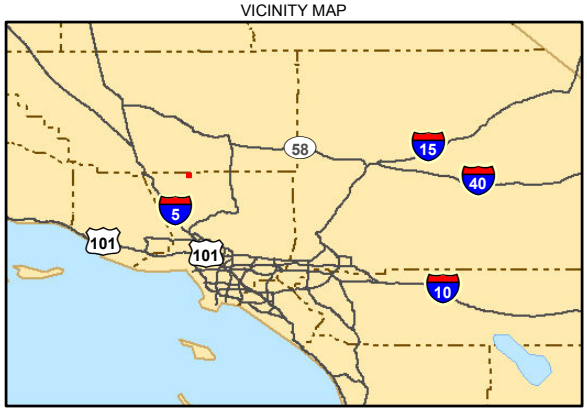
0 1,000 2,000

Feet

FIGURE 2
Project Site
Alpine Solar Project
June 2011



VICINITY MAP



LEGEND

Alpine Solar Project – Western and Eastern Parcels

Alpine Solar – 35-Acre Project

Soil Type

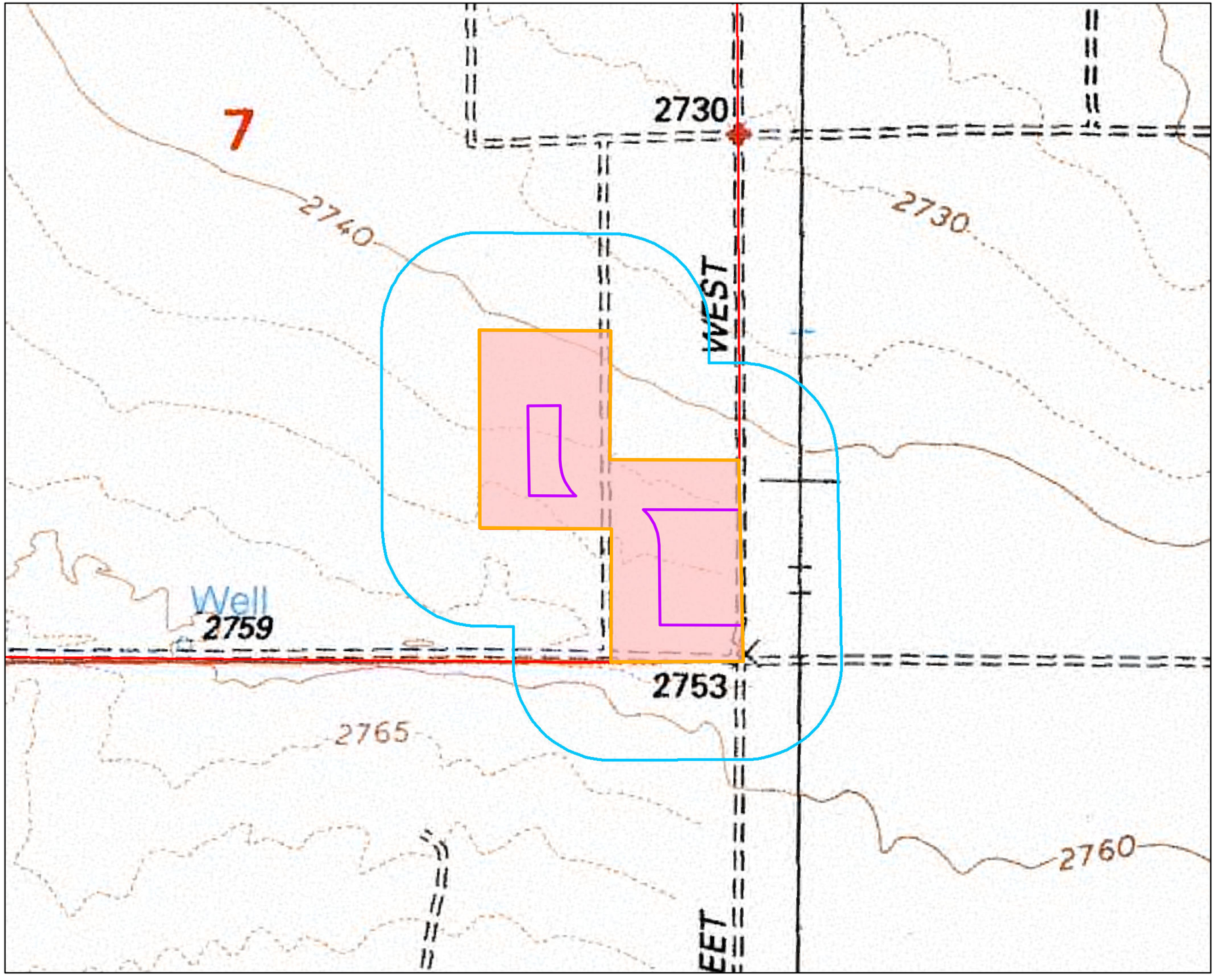
GsA - Greenfield sandy loam, 0 to 2 percent slopes
HaB2 - Hanford loamy sand, 2 to 5 percent slopes, hummocky
HbA - Hanford coarse sandy loam, 0 to 2 percent slopes
HcA - Hanford sandy loam, 0 to 2 percent slopes
HfA - Hanford loam, 0 to 2 percent slopes
VaA - Vernalis sandy loam, 0 to 2 percent slopes
VbA - Vernalis loam, 0 to 2 percent slopes
VcA - Vernalis clay loam, 0 to 2 percent slopes

N

0 300 600
Feet

Source: Natual Resources Conservation Service 2004

FIGURE 3
Soil Mapping Units
Alpine Solar Project
June 2011



LEGEND

- Rare Plant Survey Area
- Special Status Species Assessment
- Burrowing Owl Survey Area (35-acres and 150 m buffer)
- Alpine Solar – 35-Acre Project
- Alpine Solar Project – Western and Eastern Parcels

N

0 500
Feet

Figure 4
Biological Survey Areas
Alpine Solar Project
June 2011

Appendix A
Alpine Solar Project Site
Botanical Technical Report, July 2010

Report

Technical Report: Botanical Resources of the Alpine Solar Project Site

Prepared for

NRG Inc.

Neenach, California

July 2010

CH2MHILL
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Contents

Executive Summary

NRG is proposing to develop a solar facility in the western Antelope Valley of southern California. The proposed Alpine site is located in Los Angeles County, approximately 20 miles west-northwest of Lancaster, California, and west of State Route 14 (SR-14).

Botanical surveys for the ±782.93-acre (ac) Alpine Solar Generating Station Project were conducted in May 2010. The Alpine Solar Generating Station project site study area (Project) consists of three areas: the proposed West Parcel site (±593.30 ac); the East Parcel (±199.63 ac); and the utility lines located within existing roads but buffered to 250-feet (±242.42 ac).

The Project area provides suitable or marginal habitat for 3 special-status plant species. Botanical surveys of the Project site were conducted in May 2010. A total of 57 genera representing 31 different plant families were observed in the Project site during the May 2010 botanical surveys. A total of 70 species were observed in the Project site, of which 50 are native and 20 are nonnative.

No federal or state listed plant species were observed in the Project site, and no other special-status plant species were observed in the Project site during botanical surveys. No special-status sensitive natural communities occur in the Project site.

SECTION 1.0

Introduction

1.1 Project Description

The proposed Project site is located in a rural and sparsely populated area of Antelope Valley in the northeastern portion of Los Angeles County (Figure 1, Appendix A). The largest communities in the immediate vicinity include Rosamond, which is approximately 18 miles to the northeast, and Lancaster, which is approximately 20 miles to the southeast. Recreational opportunities in the area include the Los Angeles County Desert Pines Wildlife Sanctuary, approximately 4 miles to the south; the Arthur B. Ripley Desert Woodland State Park, approximately 3 miles to the south; and the Antelope Valley Poppy Preserve State Park, located about 7 miles to the southeast. Major transportation facilities include State Route 14 (SR-14) north-south; SR-138/ Avenue D east-west; and several public, private, and military airports.

The Project site is generally bounded by West Avenue B on the north, West Avenue C on the south, 220th Street West on the West, and 200th Street West on the east. The Western and Eastern Parcels are approximately 0.5 mile from their nearest property boundary. The Project site can be located on the Neenach School USGS topographic quad and consists of assessor's parcel numbers (APNs) 3256-006-012, -013, 3256-015-002, -005, -006, -008, -008, -010, -011, -013, -014, -015, and -016.

NRG Alpine Suntower, LLC (the "Applicant") proposes to construct, own, and operate a renewable energy project providing electricity generated from clean solar technology. The Alpine Solar Generating Station (Project) will consist of a nominal 92-megawatt (MW) AC solar photovoltaic (PV) generating facility located on approximately 580 acres of developable area of the approximately 800-acre Project site. The Project site includes two distinct areas, defined for the purpose of this Application as the Western Parcel (approximately 600 acres) and the Eastern Parcel (approximately 200 acres). Power generated by the Project will be delivered to the California Independent System Operator (CAISO) grid by constructing a new, one-mile-long, single-circuit 66-kilovolt (kV) transmission line to the Neenach Substation, which is owned and operated by Southern California Edison (SCE). The 66-kV transmission line for the Project will be located adjacent to 210th Street West (currently an unpaved road) and will extend from the Project site to the Neenach Substation. The proposed access road will be located on 210th Street West and on a portion of West Avenue C, which is a one-lane unpaved road.

1.2 Environmental Setting

The Project site will be located on land that has been extensively used for agriculture production. The Project electric generating units and related stormwater control structures will occupy approximately 580 acres of the 800-acre site. A large drainage channel runs east-west across the northern portion of the Western Parcel and the northwestern corner of the Eastern Parcel. The ASGS solar PV modules will be located at least 100 feet from the

centerline of the defined top of bank of the drainage channel. The Project site is characterized by terrain that is gently sloped to the northeast, south of the natural drainage, and to the southeast, north of the natural drainage. Elevation ranges from approximately 2,730 to 2,765 feet above mean sea level (amsl). The local climate is dry, with rainfall averaging below 10 inches per year and no natural perennial surface waters near the site. The prevailing wind direction is easterly with a mean speed of 5.5 mph. Ambient temperatures vary from the high 30s to low 100s degrees Fahrenheit.

A preliminary geologic and geotechnical investigation was performed to evaluate general subsurface conditions, seismic hazards, and other geologic hazards and to provide general recommendations for Project design and construction. The investigation showed that (i) alluvial sediments underlie the Project site and vicinity, (ii) no active faults traverse the site, so site-specific seismic studies will not be required, and (ii) construction of the proposed solar power plant is feasible from a geologic and geotechnical engineering viewpoint. A topographic survey was also performed to establish the site benchmarks and boundaries and to understand grading and drainage requirements.

The Project area is located within the Antelope Valley, and its biogeography and climate are typical of that region. In terms of surface water hydrology, an ephemeral drainage was observed along the northwestern project boundary. No micro-topographic depressions that may occasionally pool water were observed.

Mapped soil units on the Project site include Greenfield sandy loam, 0- to 2-percent slopes, Hanford coarse sandy loam, Vernalis sandy loam, and Vernalis loam. Greenfield sandy loam occupies approximately 30 percent of the Project site; Hanford coarse loam occupies approximately 25 percent; Vernalis sandy loam occupies 8 percent; and Vernalis loam occupies the remaining 37 percent (NRCS, 2010a).

Greenfield series soils consist of deep, well-drained soils that formed in moderately coarse and coarse-textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent. The mean annual precipitation is about 15 inches, and the mean annual air temperature is about 62 degrees F. These soils are used for producing a wide variety of irrigated field, forage, and fruit crops and also for growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, and some shrubs (NRCS, 2010b).

Hanford series soils consist of very deep, well-drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent. The mean annual precipitation is about 12 inches, and the mean annual air temperature is about 63 degrees F. Hanford soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants (NRCS, 2010c).

The Vernalis series soils consist of very deep, well-drained soils on alluvial fans and flood plains. These soils formed in alluvium from mixed rock sources and are used mostly for growing irrigated crops. Slope is 0 to 5 percent. The mean annual precipitation is about 11 inches, and the mean annual temperature is about 61 degrees F. Some areas are used for livestock grazing and growing non-irrigated small grain. Vegetation in uncultivated areas is

annual grasses and forbs with some sagebrush and rabbitbrush at higher elevations in the Antelope Valley Area (NRCS, 2010d).

Although the entire Project site has been previously disturbed and historically used for agricultural production and grazing, the site supports several vegetation communities. The dominant vegetation community is non-native grassland (Holland, 1986). Other vegetation communities occurring in the Project site include rabbitbrush scrub and ruderal (Holland, 1986). Vegetation communities occurring within the 250-foot Project site and lateral buffers include Mojavean juniper woodland with intergrades of Joshua tree woodland (Holland, 1986).

Also, a vacant homestead exists in the southwestern corner of the proposed Project area; the homestead consists of dozens of ornamental, non-native trees, a water tank, a concrete pad, and small piles of rubbish from the previous tenants. The ornamental trees are 10-20 feet in height and do not appear tall enough to provide nesting sites for raptors. Two water wells with concrete pads are also visible along the southern border.

SECTION 2.0

Methods

2.1 Introduction

This section describes the methods used to complete the protocol-level field surveys of the proposed Project components. Surveys were completed within the areas shown on Figure 2 in Appendix A. Protocol-level surveys were conducted within the Project boundary, which contains the Western and Eastern Parcels, access roads, and utility lines.

Surveys were completed for special-status plants. Vegetation types of the Project area were named and classified.

The protocol-level rare plant surveys were conducted with the goal of locating and mapping all individuals of special-status plants throughout the Project area. These surveys were floristic in nature and followed the U.S. Fish and Wildlife Service's (USFWS's) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS Guidelines) (USFWS, 1996). Vegetation types were identified during reconnaissance visits and were confirmed during protocol-level surveys.

2.2 Pre-field Preparations

Pre-field research was conducted to select special-status plant species with the potential to be found within the Project area. For each potentially occurring species, information was compiled on conservation status, distribution, habitat characteristics, blooming time, presence in the project region, and other information used in field identification.

A plant was considered to be of special status if it met one or more of the following criteria:

- Federally listed, proposed, or a candidate for listing as threatened or endangered (USFWS, 2010)
- State listed, proposed, or a candidate for listing as threatened or endangered (CNDDB, 2010)
- California Native Plant Society (CNPS) designated species (CNPS, 2010)

A species was determined to have the potential to occur within the Project area if its known or expected geographic range includes the Project area or its vicinity and if its known or expected habitat is found within or near the Project area. For this project, the project area vicinity includes the Antelope Valley and adjacent areas with similar habitats.

The CDFG South Coast Region 5 office was contacted in February 2008 for a list of threatened, endangered, and other special-status species potentially present in the Project study area. The South Coast Region 5 office responded on April 7, 2008 (Appendix B). The CDFG recommended a search of CNDDB to determine whether special-status species could occur in the Project area. The California Native Diversity Database (CNDDB) was consulted

for documented occurrences of special-status species within the site boundary and a 10-mile buffer of the site (Appendix C).

The USFWS office in Ventura, California, was contacted in February 2008 for a list of threatened, endangered, and other special-status species potentially present in the Project study area. The USFWS responded on April 18, 2008. Based on a review of records and the proposed Project location, the USFWS does not believe that the site could support any listed, proposed, or candidate species for which the USFWS is responsible (Appendix B). The USFWS online species list for Los Angeles County was reviewed for federally listed, candidate, and proposed species that potentially occur on the site or in the Project vicinity. The species list for eastern Kern County was also reviewed, as the project is located near the Los Angeles County-Kern County border.

A search of the CNPS online inventory was conducted to identify additional special-status plant species with potential to occur on the site. Table 1 provides a list of species identified during the information review.

As noted below, the search of the CNDDB and USFWS county species records resulted in a list of potential special-status species that could occur in the Project area.

TABLE 1
Special-Status Species that May Occur in the Project Area

Common Name	Scientific Name	Habitat Preference Distribution and Range	Federal	State	CNPS	Habitat Present
Plants						
Braunton's milk-vetch	*Astragalus brauntonii*	- Chaparral (Chprl) - Coastal scrub (CoScr) - Valley and foothill grassland (VFGrs)/recent burns or disturbed areas, usually sandstone with carbonate layers; 4-640m	E	-	1B.1	Yes
Nevin's barberry	*Berberis nevinii*	- Chaparral (Chprl) - Cismontane woodland (CmWld) - Coastal scrub (CoScr) - Riparian scrub (RpScr)/sandy or gravelly; 274-825m	E	E	1B.1	No
Round-leaved filaree	*California macrophylla*	Found in clay soils in cismontane woodland, valley and foothill grassland;15-1200M	-	SC	1B.1	No
Slender mariposa-lily	*Calochortus clavatus var. gracilis*	Chaparral, coastal scrub, Valley and foothill grassland; 320-1000 m	-	-	1B.2	No
Pierson's morning-glory	*Calystegia peirsonii*	Found in chaparral coastal scrub, chenopod scrub, cismontane woodland, and lower montane coniferous forest. Often in disturbed areas or along roadsides or in grassy, open areas 390-1470M. Open areas along road, exposed rocky soils and on steep cliffs.	-	-	4.2	No

TABLE 1
Special-Status Species that May Occur in the Project Area

Common Name	Scientific Name	Habitat Preference Distribution and Range	Federal	State	CNPS	Habitat Present
San Fernando Valley spineflower	*Chorizanthe parryi var. fernandina*	Found on sandy soils in coastal scrub habitat on sandy banks and along dry washes; 3-1035M	C	E	1B.1	No
Clokey's cryptantha	*Cryptantha clokeyi*	Mojavean desert scrub; 800-1280 m	-	-	1B.1	No
Slender-horned spineflower	*Dodecahema leptoceras*	- Chaparral (Chprl) - Cismontane woodland (CmWld) - Coastal scrub (CoScr)(alluvial fan)/sandy; 200-760	E	E	1B.1	No
Conejo dudleya	*Dudleya parva*	- Coastal scrub (CoScr) - Valley and foothill grassland (VFGrs)/rocky or gravelly, clay or volcanic; 60-450m	T	-	1B.2	Yes
Marcescent dudleya	*Dudleya cymosa spp. marcescens*	- Chaparral (Chprl)/volcanic, rocky; 150-520m	T	R	1B.2	No
Santa Monica Mountains live-forever	*Dudleya cymosa spp. ovatifolia*	- Chaparral (Chprl) - Coastal scrub (CoScr)/volcanic or sedimentary, rocky; 150-1675	T	-	1B.2	No
Verity's dudleya	*Dudleya verity*	- Chaparral (Chprl) - Cismontane woodland (CmWld) - Coastal scrub (CoScr)/volcanic, rocky; 60-120m	T	-	1B.2	No
delicate bluecup	*Githopsis tenella*	Chaparral, cismontane woodland/mesic; 1100-1900 m	-	-	1B.3	No
Madera linanthus	*Leptosiphon serrulatus*	Dry slopes, often on decomposed granite in cismontane woodland, lower montane coniferous woodland; 300-1300 m	-	-	1B.2	No
Short-joint beavertail	*Opuntia basilaris var. brachyclada*	Found in chaparral, Joshua tree woodland, Mojave Desert scrub, and pinyon-juniper woodland communities at elevations of 900-2000 m.	-	-	1B.2	Yes
Spreading navarretia	*Navarretia fossalis*	Chenopod scrub, marshes and swamps, playas, vernal pools; 30-1300m	T	-	1B.1	No
California orcutt grass	*Orcuttia californica*	Vernal pools; 15-660m	E	E	1B.1	No
Lyon's pentachaeta	*Pentachaeta lyonii*	Chaparral, coastal scrub, Valley and foothill grassland/rocky, clay; 30-630m	E	E	1B.1	No
Greata's aster	*Symphyotrichum greatae*	Found in chaparral, cismontane woodland, mesic canyons 800-1500m. Along stream in riparian woodland. Associated with A*lnus rhombifolia, Salix laevigata, Quercus chrysolepis, Typha latifolia, Xanthium strumarium, and Juncus microphyllus.*	-	-	1B.3	No

The full list above includes those species that initially were considered to have the potential to occur within the project area; however, after additional data and site review the species are not expected to occur because no suitable habitat for them is known to occur within the project area or because no locations for them are known from within the Project vicinity. These species are retained as "not expected to occur" because of lack of suitable habitat to support the species.

Surveyors received project-specific training prior to the field surveys. Photo guides containing close-up photos of potentially occurring special-status common natives were prepared and reviewed prior to field surveys.

2.3 Field Survey Methods

Field work, including reconnaissance field review, was conducted on April 1, 2010; protocol-level surveys were conducted on May 5, 6, 7, 12, 13, and 14, 2010.

During the reconnaissance survey, vegetation types were analyzed, plant growth stage was determined, familiarization with project component locations occurred, and preliminary plant lists were compiled.

Protocol-level surveys for special-status plants were conducted in all proposed project component sites, including the Project boundary and utility line corridors located outside the Project boundary and within a 250-foot buffer. The goal of these surveys was to census, map, photograph, and record habitat data for every special-status plant location observed. Surveys were floristic, meaning that all plants were identified to the level needed to determine whether they were special-status species. Surveys were completed in early May, at a time when all potentially occurring special-status plants with moderate to high likelihood of occurrence and most species with low to very low likelihood of occurrence would be identifiable from flowers or distinctive vegetative features. Rainfall within the Project area preceding the survey was likely above average and late in the season, based on the abundance and size of the common and typical annual plant species that were observed and appear most abundantly in years of average to above-average rainfall. Special-status plant surveys met the recommendations of the botanical survey guidelines of the USFWS (USFWS, 1996).

The ability of surveyors to detect and identify plants in the field rapidly and accurately was enhanced by the training session of common species to assure the accuracy of plant lists compiled by the survey crew. All crew members used site-specific photo guides and preliminary plant lists throughout the field survey.

Surveyors walked transects at 50-foot intervals to search for special-status plants. The 50-foot interval spacing increased the likelihood of detecting small, cryptically colored special-status plants.

Surveyors walked transects at 100-foot intervals within a portion of the Eastern Parcel. Transects within the 0.5-mile-square parcel bordered on the west by 205th Street, on the north by Avenue B-8, on the east by 200th Street, and on the south by Avenue C were greater spaced because of a dense monotypic stand of mustard occupying this recently cultivated agricultural field.

Transect lines were printed on paper maps and were included in background files on the Trimble GeoXT Global Positioning System (GPS) units that were used to navigate and take data in the field. Surveyors walked the transect lines shown on the background files. Each surveyor searched within a separate 50-foot-wide corridor. Crew members stayed more or less together while walking each set of transects. Habitat data was recorded in field notes.

In addition to the Project site boundary, all project components were buffered 250 feet to determine whether special-status species occur in less disturbed lands on adjacent parcels.

Proposed project utility lines were also buffered 250 feet to accommodate unanticipated realignment.

2.4 Methods for Classifying Vegetation

The principle references used in naming and classifying the Project area vegetation include *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986) and *A Manual of California Vegetation* (Sawyer and Keeler-Wolf, 1995).

A preliminary project-specific description of vegetation types and subtypes, based on observations of dominant species and habitat characteristics, was developed during reconnaissance-level visits to the Project area. These descriptions were refined during protocol-level surveys using more thorough observations of the Project area vegetation. Descriptions of Project area vegetation types and subtypes are provided in Section 3.

SECTION 3.0

Results: Vegetation

This section includes results of the vegetation classification developed for this Project and provides summary descriptions of the vegetation within each Project feature. The Project area vegetation types, including the reconnaissance-level survey area, include non-native grassland, rabbitbrush scrub, and ruderal. These vegetation types are distinguished on the basis of plant species composition, substrate type, and terrain.

A list of all plant species observed within the Alpine project site during surveys conducted for this project is provided in Appendix D. Representative photographs within the Project site are presented in Appendix E.

3.1 Vegetation Types

3.1.1 Non-native Grassland

The predominant vegetation community on the Project site is previously disturbed non-native grassland with varying degrees of disturbance. These areas had previously been in agricultural production but have been fallow long enough to have been colonized by herbaceous species, although not long enough to support shrub species. Vegetation in all areas is dominated by ruderal species, including cheatgrass (*Bromus tectorum*), red brome (*Bromus rubens*), rip-gut brome (*Bromus diandrus*), Russian thistle (*Salsola tragus),* bristly fiddleneck (*Amsinkia tessellata*), red-stem filaree (*Erodium cicutarium*), London rocket (*Sisimbrium ireo*), tumblemustard (*Sysimbrium altissimum*), and foxtail barley (*Hordeum jubatum*). Native species occurring in fewer numbers include chick lupine (*Lupinus microcarpus*), desert dandelion (*Malacothrix californica var. glabrata*), and evening primrose (*Camissonia campestris*). Non-native grassland is the dominant vegetation within the proposed Project site, making up most of the Western Parcel.

3.1.2 Agricultural

The second most abundant vegetation community is recently cultivated agricultural land. This community occurs on a 0.5-square-mile parcel within the Eastern Parcel bordered on the west and north by a wind row of pine trees (*Pinus* spp.). This parcel had recently been used for carrot cultivation, and the remnant plow rows now support a monotypic stand of tumble mustard.

3.1.3 Rabbitbrush Scrub

The third most abundant plant community on the Project site is Rabbitbrush scrub (Holland, 1986), dominated by the Mojave rubber rabbitbrush (*Chrysothamnus nauseosus spp. mohavensis*). This community is a disturbance-maintained community (Holland, 1996). Rabbitbrush scrub is a plant community that results from prior land use disturbance and contains both native and non-native habitat elements. Observed native herbaceous understory species include Fremont's pincushion (*Chaenactis fremontii*), California poppy (*Eschscholtzia californica*), chick lupine (*Lupinus microcarpus*), and desert dandelion. Common

non-native species observed included red brome, rip-gut brome, Russian thistle, tumble mustard, London rocket (*Sisimbrium ireo*), and red leaved filaree.

Mojavean Juniper Woodland and Scrub

The least abundant vegetation community is Mojavean juniper woodland (Holland, 1986). This community is an open woodland dominated by California juniper (*Juniperus californicus*) and little shrub understory. In the Project area, Mojavean Juniper Woodland intergrades with Joshua tree (*Yucca brevifolia*) woodland, although it is much less abundant.

This vegetation community does not occur within the Project boundary; rather, the vegetation community occurs within the 250-foot buffer of the Project site and utility lines. This juniper/Joshua tree woodland appears to be a remnant stand that has been fragmented by development and other activities such as illegal dumping, grazing, and habitation.

3.2 Vegetation Types of Proposed Project Area

This section describes the vegetation observed within each proposed Project feature. Vegetation types are summarized in Table 2. The area of each vegetation type and subtype found within each Project feature is roughly estimated, based on visual examination of high resolution aerial photographs. No desert washes, wetlands, or aquatic features were observed anywhere within the Project site.

TABLE 2
Vegetation Types within the Proposed Alpine Project Area

Project Feature	Vegetation Type Present	Estimated Percent Cover within the Project Feature
Western Parcel	Non-Native Grassland	75-80
	Rabbitbrush scrub	20-25
Eastern Parcel	Rabbitbrush scrub	33
	Agricultural	66
Utility Lines	Non-Native Grassland	30-35
	Rabbitbrush scrub	40-45
	Mojavean Juniper Woodland	20-25

SECTION 4.0

Results: Special-status Plants

This section includes the results of field surveys for special-status plants.

4.1 Special-status Plants Abundance and Distribution within the Project Area

The Project site provides suitable or marginal habitat for three special-status plant species. Botanical surveys of the Project site were conducted in May 2010; a total of 57 genera representing 31 plant families were observed in the Project site during the May 2010 botanical surveys. A total of 70 species were observed in the Project site, of which 50 are native and 20 are nonnative.

No special-status plants were found within any of the proposed Project features. Protocol-level surveys were conducted within all proposed Alpine Project features, including the Project site boundary, utility alignments, access roads, and 250-foot buffer.

SECTION 5.0

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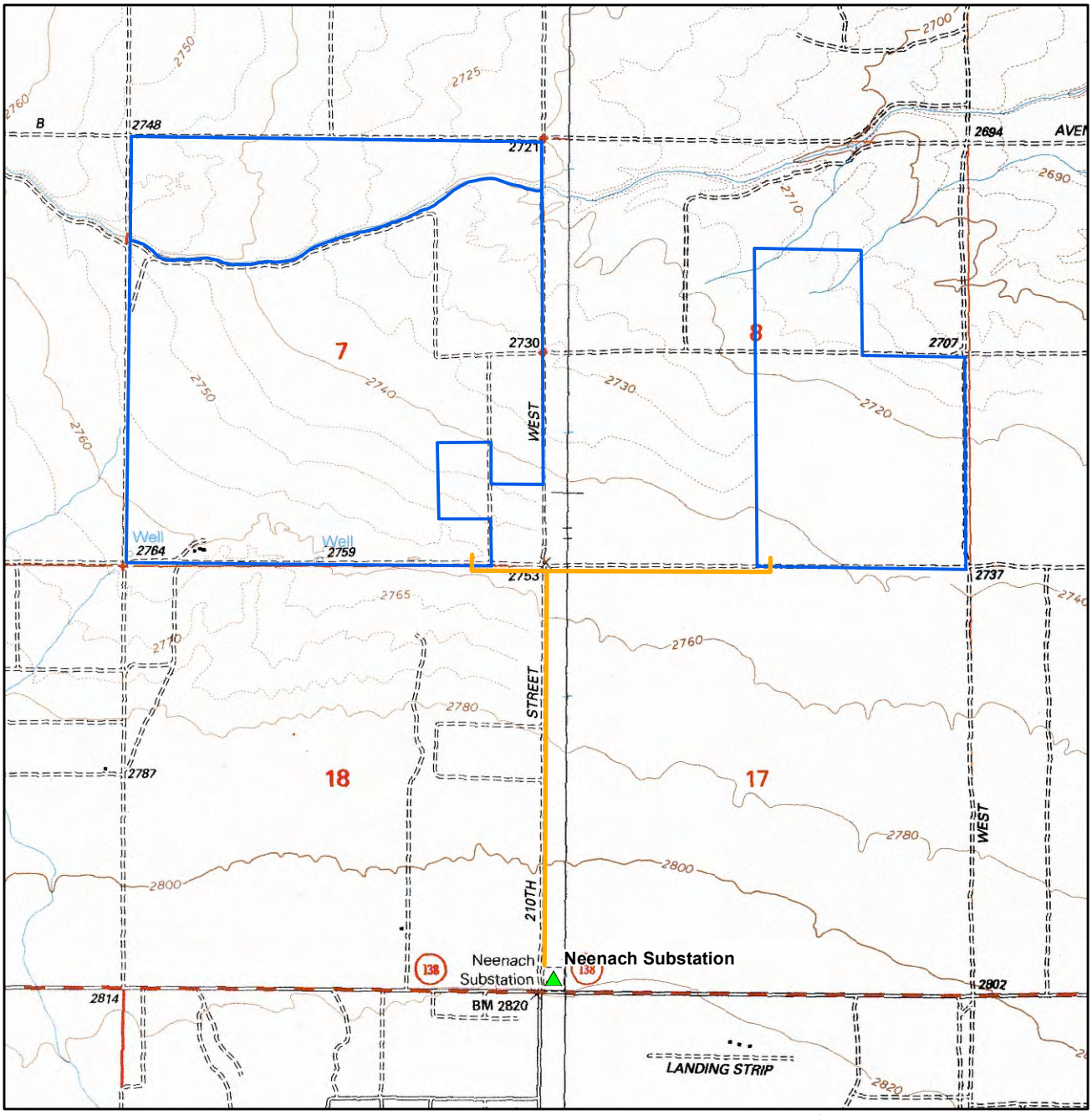
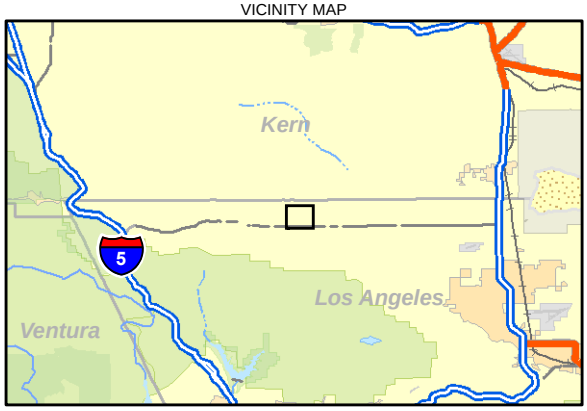
Appendix A – Figures



LEGEND

- Substation
- Transmission Line
- Project Site

VICINITY MAP



N

0 1,000 2,000

Feet

Project Site

Alpine Solar Generating Station

ALPINE

PHOTOVOLTAIC SOLAR POWER PLANT
LOS ANGELES COUNTY, CALIFORNIA
PROPOSED SOLAR FACILITY

AVENUE B

AVENUE B-8

AVENUE C

220TH STREET WEST

210TH STREET WEST

PROPOSED 100' DRANAGE SETBACK

PROPOSED 8' CHAIN LINK FENCE ON PROPERTY LINE

PROPOSED 20' SETBACK

PROPOSED POWER EQUIPMENT

PROPOSED POWER LINE

TO HWY 138 (SEE BELOW)

EAST SITE (SEE BELOW)

TO WEST SITE (SEE ABOVE)

HWY 138

PROPOSED A.C. ROAD

EXISTING NEENACH SUB-STATION

210TH STREET

LEGEND

PROPOSED PHOTOVOLTAIC FEILDS

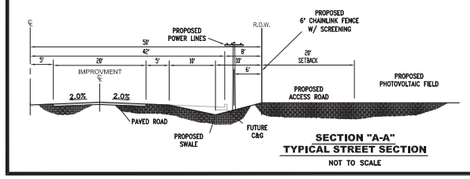
SITE INFORMATION:

GROSS SITE ACREAGE:	
WEST:	25,844,107 SF/593.30 AC
EAST:	8,695,691 SF/199.63 AC
NET SITE AREA:	
WEST:	25,083,166 SF/576.06 AC
EAST:	8,441,833 SF/193.80 AC
EXISTING ZONING:	A-2-5
PROPOSED ZONING:	A-2-5
EXISTING LAND USE:	AGRICULTURAL
PROPOSED LAND USE:	PHOTOVOLTAIC SOLAR POWER PLANT
THOMAS BRO'S MAP:	X
PROPOSED BUILDINGS:	
ADMINISTRATION BUILDING:	X SF.

MINIMUM SETBACKS:	REQUIRED	PROVIDED
FRONT	?	20'
REAR	?	20'
SIDE	?	20'

PARKING SUMMARY:

	REQUIRED	PROVIDED
TOTAL OFFICE AREA, 450 SQ. FT. (1SP/250 SQ. FT.)	2	2
TOTAL EMPLOYEES LARGEST SHIFT, (1SP/PER EMPLOYEE)	2	2
DISABLED PARKING (MIN. 1 VAN ACCESSIBLE, 17'X 19')	1 VAN ACCESSIBLE	1 SPACES (1 VAN ACCESSIBLE)
TOTAL PARKING REQUIRED	5	6



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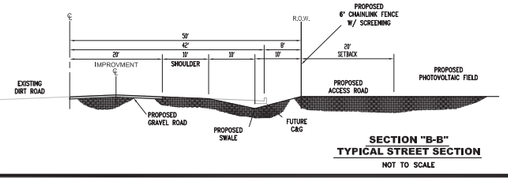
TYPICAL STREET SECTION
NOT TO SCALE



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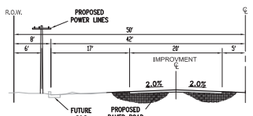
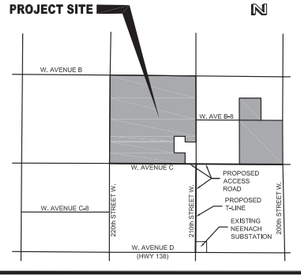


SECTION "C-C"
TYPICAL STREET SECTION
NOT TO SCALE

VICINITY MAP

N.T.S.

PROJECT SITE



PRELIMINARY NOT FOR CONSTRUCTION

SCALE: 1"=250'

JOSEPH E. BONADIMAN & ASSOCIATES INC.
consulting engineers land surveyors
234 N. ARROWHEAD AVE., SAN BERNARDINO, CA 92408-1013
PHONE: (909) 885-3806 - FAX: (909) 381-1721

VERTICAL DATUM

BENCH MARK: L-7035, 50MM(2IN) IP & LACO BM TAG UP 25MM(1IN) 9.4M(31FT) SW/O C/L LANCASTER RD & 0.2K(0.5MI) S/O AVE D 900MM(3FT) SW/O TEL RISER 0.1M(30FT) N/O C/L DIRT RD TO W.

VERTICAL DATUM ELEVATION _____ NAVD 88 2820.722'

HORIZONTAL DATUM

BASIS OF BEARINGS:
BEARINGS SHOWN HEREON ARE BASED ON CALIFORNIA COORDINATE SYSTEM ZONE 5, 1983 N.A.D. AS DERIVED FROM STATIC G.P.S. OBSERVATIONS.

NRG ~ ALPINE

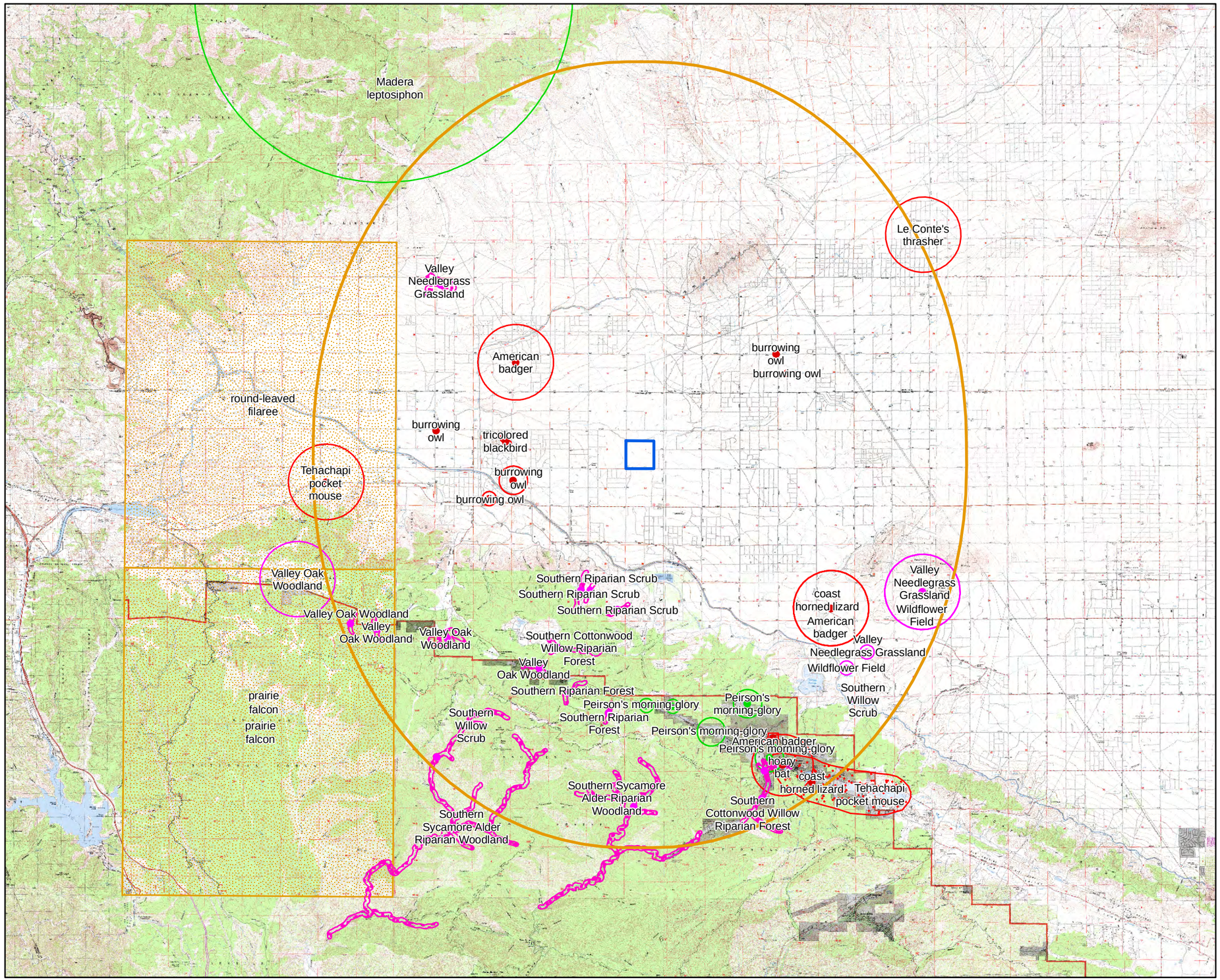
PRELIMINARY SITE PALN
TOWNSHIP 8 NORTH, RANGE 15 WEST
LOS ANGELES COUNTY, CALIFORNIA

REVISIONS

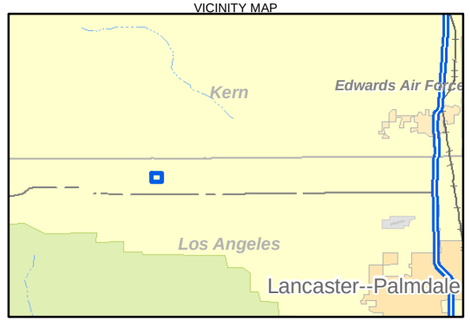
NO	DESCRIPTION	BY	APPROVED	DATE

PREPARED FOR: ALTA VISTA SUNTOWER, LLC.

DRAWN BY: J.T.S.	SCALE: 1" = 250'	SHEET: 1 OF 1	C1
CHECKED BY: J.T.S.	JOB NO: 093543		
DISREGARD PRINTS BEARING EARLIER REVISION DATES	03-31-10		



VICINITY MAP



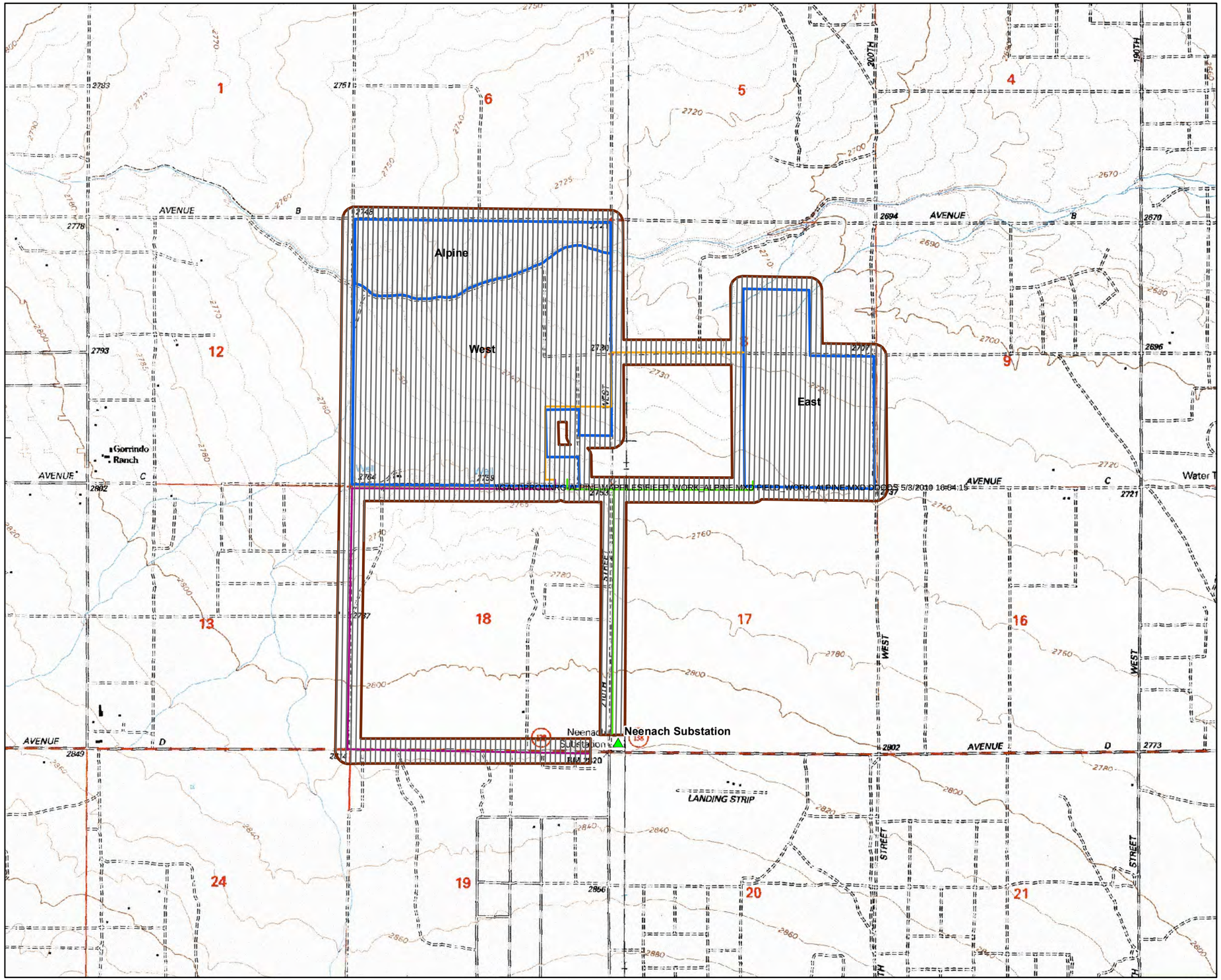
LEGEND

- Project Site
- Project Site Buffer - 10 miles
- Plant
- Animal
- Terr. Comm.
- Aqu. Comm.
- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terr. Comm. (80)
- Terr. Comm. (specific)
- Terr. Comm. (non-specific)
- Terr. Comm. (circular)
- Aqu. Comm. (80)
- Aqu. Comm. (specific)
- Aqu. Comm. (non-specfic)
- Aqu. Comm. (circular)
- Sensitive EO's (Commercial only)

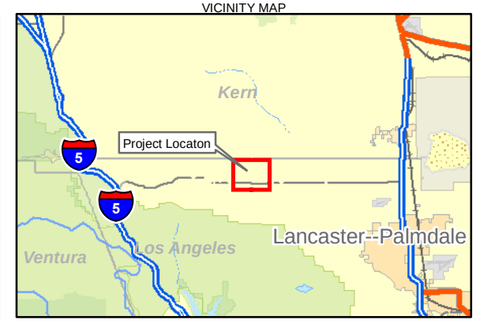
N

0 1 2
Miles

FIGURE X
CNDDB Species Occurrences, 10-Mile Radius
NRG Alpine Project



VICINITY MAP



LEGEND

- Substation
- Transects
- Preferred Interconnection Route
- Alternate Interconnection and Gen-tie Route
- Alternate Gen-tie Route
- Project Site
- Project Site and Transmission Line Easement (250 Foot Buffer)

N

0 1,000 2,000

Feet

Botanical Survey Area

Alpine Solar Generating Station

Appendix B – Agency Letters

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
2008-SL-0368

April 18, 2008

Jina Sagar, Project Biologist
Tetra Tech EC, Inc.
1750 SW Harbor Way, Suite 400
Portland, Oregon 97201

Subject: Species List for Alta Vista Solar Generating Station, Lancaster, Los Angeles County, California

Dear Ms. Sagar:

This is in response to your letter dated February 27, 2008, which we received on March 6, 2008, requesting information on federally endangered and threatened species that may occur at the proposed Alta Vista Solar Generating Station and associated transmission line near Lancaster. The proposed solar project site is on a 388 acre parcel (APN 3256015016; T8N R15W S7). Based on review of our records and the proposed project location, we do not believe that the site could support any listed, proposed, or candidate species for which the U.S. Fish and Wildlife Service is responsible.

Only listed species receive protection under the Endangered Species Act of 1973, as amended. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Game's Natural Diversity Data Base. You can contact the California Department of Fish and Game at (916) 324-3812 for information on other sensitive species that may occur in this area.

We note that the proposed project may adversely affect migratory birds in the area. The U.S. Fish and Wildlife Service's responsibilities include management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA). The MBTA (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for allowing unauthorized take, we recognize that some birds may be killed at structures such as wind turbines even if all reasonable measures to avoid it are implemented. The Service's Division of Law Enforcement carries out its mission to protect migratory birds not only through investigations and enforcement, but through fostering relationships with individuals and industries that actively seek to eliminate their impacts on migratory birds. Although individuals or companies cannot be absolved from liability under the MBTA if

they follow these recommended guidelines, the Division of Law Enforcement and Department of Justice have used enforcement and prosecutorial discretion in the past regarding individuals or companies who have made good faith efforts to avoid the take of migratory birds.

If you have any questions regarding this matter, please contact Ray Bransfield at telephone (805) 644-1766, Extension 317.

Sincerely,

Carl T. Benz
Assistant Field Supervisor

"Kelly Schmoker" <KSchmoker@dfg.ca.gov>

04/07/2008 10:41 AM

To "Annette Tenneboe" <ATENNEBOE@dfg.ca.gov>, <Jina.Sagar@tteci.com>
cc "Helen Birss" <HBIRSS@dfg.ca.gov>, "Julie Vance" <JVANCE@dfg.ca.gov>, "Terri Dickerson" <TDICKERSON@dfg.ca.gov>, <Emily.Festger@tteci.com>
Subject Re: Fwd: Alta Vista AFC

Jina,
As I indicated to you over the phone, Region 5 is not able to provide the level of species account information you have requested for this large project. Please refer to our California Natural Diversity Database as a starting point to form a species list. Please keep in mind that this is only a positive sighting database, so if no surveys have been conducted in the area, there will be a lack of data. To help make your list more robust, we suggest using the 8 USGS quadrangles surrounding your project to give you a better potential species list. Additionally, contacting local herbaria, the CNPS rare plant inventory (WWW.CNPS.org) and local fauna experts can give you a better idea as to what is in the area. If you need assistance with contacts, I can suggest a few people. Additionally, using environmental documents that have been prepared in your project area is another good place to look.

Please call if you have any further questions,
Kelly

Kelly Schmoker
Staff Environmental Scientist
Dept. of Fish and Game
626-335-4369
147 W. Route 66, #508
Glendora, CA 91740

>>> Annette Tenneboe 4/7/2008 10:29 AM >>>
Jina,

Since you were not able to provide me with a copy of the CDFG letter from Region 5, I can only speculate on the Department's response. The Department of Fish and Game acts as a Responsible and Trustee Agency for the purpose of CEQA/CESA review. Researching and providing the amount of information that was requested in the attached letter would put the Department in the position of acting in the same capacity as a consultant for the benefit of the applicant of the proposed project. The difference between Regions is that Region 5 apparently provided a formal letter of response, and I responded briefly via email that I do not have the time or resources to invest in researching all of the information requested by Tetra Tech.

Annette Tenneboe
Environmental Scientist
California Department of Fish and Game
Central California Region
1234 East Shaw Avenue
Fresno, California 93710
office: (559) 243-4014 x 220

fax: (559) 243-4020
email: atenneboe@dfg.ca.gov

>>> <Jina.Sagar@tteci.com> 4/1/2008 11:56 AM >>>
Hello Annette--

I am following up on the information Emily Festeger gave me regarding her
CDFG contact. Here is the letter request I sent to Terri Dickerson, which
then went to Kelly Shmoker. I wanted to just understand how and if the response letter varied by region. The letter also included two maps of the
project area and T-line. If you would like to see these please let me know.

Thanks for clarifying,

Jina Sagar

Jina Sagar | Biologist
Direct: 503.721.7210 | Fax: 503.227.1287
jina.sagar@tteci.com

Tetra Tech EC, INC. |
1750 SW Harbor Way, Suite 400 | Portland, OR 97201 | www.tteci.com

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Appendix C – CNDDB Results

Agelaius tricolor

tricolored blackbird

Element Code: ABPBXB0020

Status

Federal: None
State: None

NDDB Element Ranks

Global: G2G3
State: S2

Other Lists

CDFG Status: SC

Habitat Associations

General: HIGHLY COLONIAL SPECIES, MOST NUMBEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro: REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Occurrence No. 400 **Map Index:** 55403 **EO Index:** 55403

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 2000-04-22
Site: 2000-04-22

Record Last Updated: 2004-05-10

Quad Summary: Neenach School (3411875/188D)

County Summary: Los Angeles

Lat/Long: 34.79923º / -118.57496º
UTM: Zone-11 N3851909 E355925
Area:
Elevation: 2,893 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON

Township: 08N
Range: 16W
Section: 09 **Qtr:** NE
Meridian: S

Location: ALONG THE SHORE OF HOLIDAY LAKE. NORTH OF AVE B8, WEST OF 250TH ST W. ANTELOPE VALLEY

Ecological: HABITAT IS 75% CATTAIL AND 25% BULRUSH. MUCH VEGETATION HAS BEEN CLEARED.

General: POPULATION ESTIMATE OF 210 BIRDS.

Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 350 **Map Index:** 42520 **EO Index:** 42520
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-27
Site: 1999-06-27
Record Last Updated: 2000-07-12

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.80308º / -118.60715º
UTM: Zone-11 N3852383 E352987
Radius: 80 meters
Elevation: 2,910 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 08 **Qtr:** XX
Meridian: S

Location: SE OF THE INTERSECTION OF AVENUE B AND 270TH STREET WEST, ANTELOPE VALLEY.
Location Detail: BURROW IS LOCATED 20 FEET SOUTH OF THE INTERSECTION.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS; A STAND OF JOSHUA TREES FOUND NEARBY.
General: MALE OBSERVED AT THE BURROW DURING APR & MAY, STARTING ON 16 APR 1999. FEMALE AND YOUNG OBSERVED ON 6 JUN 1999. 2 ADULTS AND 6 JUVENILES OBSERVED ON 27 JUN 1999.
Owner/Manager: PVT?

Occurrence No. 351 **Map Index:** 42522 **EO Index:** 42522
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-11
Site: 1999-06-11
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.78435º / -118.57135º
UTM: Zone-11 N3850253 E356230
Radius: 2/5 mile
Elevation: 2,940 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 15 **Qtr:** XX
Meridian: S

Location: 250TH STREET WEST, BETWEEN AVENUE C AND THE CALIFORNIA AQUEDUCT, ANTELOPE VALLEY
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: BURROW WITH FLEDGED YOUNG OBSERVED ON 11 JUN 1999.
Owner/Manager: UNKNOWN

Occurrence No. 352 **Map Index:** 42523 **EO Index:** 42523
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-26
Site: 1999-03-26
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.77728º / -118.58243º
UTM: Zone-11 N3849485 E355204
Radius: 1/5 mile
Elevation: 3,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 16 **Qtr:** XX
Meridian: S

Location: NORTH OF AVENUE D, NEAR 256TH STREET WEST, ANTELOPE VALLEY.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: OCCUPIED BURROW OBSERVED ON 26 MAR 1999.
Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 985 **Map Index:** 69939 **EO Index:** 70770
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.82583º / -118.44481º
UTM: Zone-11 N3854680 E367874
Radius: 80 meters
Elevation: 2,635 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 09N
Range: 15W
Section: 35 **Qtr:** SW
Meridian: S

Location: 0.5 MILE EAST OF 180TH STREET WEST AND 1 MILE NORTH OF WEST AVENUE A, 9 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

Occurrence No. 986 **Map Index:** 69941 **EO Index:** 70771
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.83305º / -118.44981º
UTM: Zone-11 N3855488 E367429
Radius: 80 meters
Elevation: 2,635 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 09N
Range: 15W
Section: 34 **Qtr:** NE
Meridian: S

Location: SOUTH SIDE OF GASKELL ROAD, JUST WEST OF 180TH STREET WEST, 9.2 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 3 **Map Index:** 01210 **EO Index:** 18563

Dates Last Seen
Element: 1972-XX-XX
Site: 1979-06-12
Record Last Updated: 1989-08-11

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69858º / -118.50925º
UTM: Zone-11 N3840654 E361769
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 18 **Qtr:** N
Meridian: S

Location: 0.1 MI SE OF PINE CYN FOREST STATION, W OF LAKE HUGHES, ALONG HWY N2.
Ecological: IN WOODLAND. ASSOCIATED WITH QUERCUS CHRYSOLEPIS, POISON OAK AND RHAMNUS CROCEA.
Threat: HEAVY GRAZING HAS ELIMINATED PLANT ABOVE FENCE LINE.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 16 **Map Index:** 01386 **EO Index:** 18554

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-11

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69948º / -118.46240º
UTM: Zone-11 N3840691 E366061
Radius: 2/5 mile
Elevation: 4,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 15 **Qtr:** E
Meridian: S

Location: TROEDEL SPRINGS PLATEAU, PORTAL RIDGE.
Location Detail: MAPPED IN VICINITY OF TROEDEL SPRINGS; LOCATION VAGUE.
General: NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No. 17 **Map Index:** 01262 **EO Index:** 18550

Dates Last Seen
Element: 1982-06-17
Site: 1982-06-17
Record Last Updated: 2007-09-10

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69831º / -118.49703º
UTM: Zone-11 N3840607 E362888
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 17 **Qtr:** NW
Meridian: S

Location: 0.7 MI UP DIRT RD NORTH OF PINE CANYON RD, 0.3 TO 0.5 MI E OF REST AREA.
Ecological: IN LOOSE, LIGHT SOIL AND ROCKY OUTCROPS; ASSOCIATED WITH ERIOGONUM FASCICULATUM, YUCCA WHIPPLEI, QUERCUS DUMOSA, AVENA SP., AND CERCOCARPUS BETULOIDES.
General: EXCELLENT TO GOOD CONDITION IN 1982.
Owner/Manager: USFS-ANGELES NF

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 28 **Map Index:** 01047 **EO Index:** 18540

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67891º / -118.45222º
UTM: Zone-11 N3838395 E366961
Radius: 2/5 mile
Elevation: 1,800 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NEAR JCT LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 29 **Map Index:** 01019 **EO Index:** 12608

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68865º / -118.47912º
UTM: Zone-11 N3839512 E364512
Radius: 2/5 mile
Elevation: 2,000 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 07N
Range: 15W
Section: 16 **Qtr:** SW
Meridian: S

Location: 1.8 MI NW OF JCT OF LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Lasiurus cinereus

hoary bat

Element Code: AMACC05030

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4?

Other Lists
CDFG Status:

Habitat Associations
General: PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER & OPEN AREAS OR HABITAT EDGES FOR FEEDING.
Micro: ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Occurrence No. 50 **Map Index:** 68504 **EO Index:** 68809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1938-07-15
Site: 1938-07-15
Record Last Updated: 2007-03-16

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67609º / -118.44615º
UTM: Zone-11 N3838075 E367513
Radius: 4/5 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 23 **Qtr:** XX
Meridian: S

Location: LAKE HUGHES.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED AS BEST ESTIMATE AROUND COMMUNITY OF LAKE HUGHES.
General: 1 MALE SPECIMEN (LACM #5003) COLLECTED BY J. VON BLOEKER ON 15 JUL 1938.
Owner/Manager: UNKNOWN

Perognathus alticolus inexpectatus

Tehachapi pocket mouse

Element Code: AMAFD01082

Status

Federal: None
State: None

NDDB Element Ranks

Global: G1G2T1T2
State: S1S2

Other Lists

CDFG Status: SC

Habitat Associations

General: ARID ANNUAL GRASSLAND & DESERT SHRUB COMMUNITIES, BUT ALSO TAKEN IN FALLOW GRAIN FIELD & IN RUSSIAN THISTLE.

Micro: BURROWS FOR COVER & NESTING. AESTIVATES AND HIBERNATES DURING EXTREME WEATHER. FORAGES ON OPEN GROUND & UNDER SHRUBS.

Occurrence No. 18 **Map Index:** 65730 **EO Index:** 65809

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 1965-05-08
Site: 1965-05-08

Record Last Updated: 2006-08-09

Quad Summary: La Liebre Ranch (3411876/188C)

County Summary: Los Angeles

Lat/Long: 34.78328º / -118.65792º
UTM: Zone-11 N3850262 E348306
Radius: 1 mile
Elevation: 3,000 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 08N
Range: 17W
Section: 14 **Qtr:** XX
Meridian: S

Location: ABOUT 5 ROAD MILES EAST OF QUAIL LAKE ALONG HWY 138.

Location Detail: LOCATION GIVEN ONLY AS "5 MI E QUAIL LAKE". MAPPED AT THE COORDINATES GIVEN BY MANIS WITH A LOCATION UNCERTAINTY OF 6 MILES.

General: LACM #48790 COLLECTED 8 MAY 1965 BY R. G. HANNUM.

Owner/Manager: UNKNOWN

Phrynosoma blainvillii

coast horned lizard

Element Code: ARACF12100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4G5
State: S3S4

Other Lists
CDFG Status: SC

Habitat Associations
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.

Occurrence No. 157 **Map Index:** 01549 **EO Index:** 28059
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 1989-08-10

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, 4 MI NNE OF LAKE HUGHES.
General: SDNHM SPECIMEN; DATE OF COLLECTION UNKNOWN.
Owner/Manager: UNKNOWN

Occurrence No. 458 **Map Index:** 46981 **EO Index:** 46981
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-09-27
Site: 2001-09-27
Record Last Updated: 2002-01-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66957º / -118.43252º
UTM: Zone-11 N3837334 E368752
Radius: 80 meters
Elevation: 3,287 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 26 **Qtr:** NE
Meridian: S

Location: PAINTED TURTLE CAMP, LAKE HUGHES.
Ecological: HABITAT CONSISTS OF RECOVERING CHAPARRAL.
Threat: THREATENED BY OFF-ROAD VEHICLES.
General: 1 JUVENILE OBSERVED FORAGING IN OPEN CHAPARRAL ON 27 SEP 2001.
Owner/Manager: PVT

Southern Cottonwood Willow Riparian Forest

Element Code: CTT61330CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 37 **Map Index:** 01082 **EO Index:** 15813

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-20

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72079º / -118.55064º
UTM: Zone-11 N3843175 E358016
Area: 113.3 acres
Elevation: 3,760 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 16W
Section: 02 **Qtr:** S
Meridian: S

Location: KINGS CANYON, WEST OF KINGS CYN RANCH FOR ABOUT 1.3 MI.
Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOGRAPHS.
Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: FIELD VERIFICATION NEEDED.
Owner/Manager: UNKNOWN

Occurrence No. 38 **Map Index:** 01450 **EO Index:** 15811

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1988-04-02
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66348º / -118.45549º
UTM: Zone-11 N3836688 E366637
Area: 200.9 acres
Elevation: 3,120 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 15W
Section: 27 **Qtr:** E
Meridian: S

Location: ELIZABETH LAKE CANYON, FROM HUGHES LAKE D/S FOR ABOUT 1.5 MI, & TRIBUTARY.
Ecological: COTTONWOODS OVER WILLOW SEEN 1988. NO WATER IN STREAM ON DAY OF APRIL VISIT. WIESLANDER MAPPED
Threat: PEAR ORCHARDS ENCROACHING
General: THIS WAS OCC #038 OF CTT61330CA.
Owner/Manager: PVT IN USFS-ANGELES NF

Occurrence No. 39 **Map Index:** 01447 **EO Index:** 15812

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown

Dates Last Seen
Element: 1935-XX-XX
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67398º / -118.45439º
UTM: Zone-11 N3837852 E366755
Area: 63.1 acres
Elevation: 3,400 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NORTH & WEST SHORE HUGHES LAKE & SURROUNDINGS.
Location Detail: ONCE CONTINUOUS W/ OCC 038.
Ecological: WIESLANDER MAPPED AS CLOSED CANOPY WILLOWS. POPULUS FREMONTII PRESENT BUT UNDERSTORY DEVELOPED. EXTIRPATED AS A NATURAL COMMUNITY.
General: THIS WAS OCC #39 OF CTT61330CA.
Owner/Manager: PVT

Southern Riparian Forest

Element Code: CTT61300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 14 **Map Index:** 01080 **EO Index:** 16035

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.70338º / -118.54557º
UTM: Zone-11 N3841237 E358451
Area: 61.4 acres
Elevation: 4,170 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 11 **Qtr:** XX
Meridian: S

Location: HIDEWAY CANYON, FOR ABOUT 0.9 MI U/S (S) OF PINE CANYON RD.
Location Detail: BOUNDARY REPRESENTS EXTENT AS INTERPRETED FROM 1978 AERIAL PHOTOS.
Ecological: DENSE COVER. VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VISIT.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 15 **Map Index:** 01150 **EO Index:** 16036

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1989-08-10

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69571º / -118.52674º
UTM: Zone-11 N3840360 E360162
Area: 37.7 acres
Elevation: 4,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 13 **Qtr:** E
Meridian: S

Location: SHAKE CANYON, BETWEEN UPPER & LOWER SHAKE CAMPGROUNDS.
Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOS.
Ecological: VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VISIT.
Owner/Manager: USFS-ANGELES NF

Southern Riparian Scrub

Element Code: CTT63300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 28 **Map Index:** 01096 **EO Index:** 15316

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Neenach School (3411875/188D), Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74258º / -118.53965º
UTM: Zone-11 N3845576 E359059
Area: 68.7 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 35 **Qtr:** E
Meridian: S

Location: BALDWIN GRADE CANYON, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION.

Owner/Manager: UNKNOWN

Occurrence No. 29 **Map Index:** 01113 **EO Index:** 15314

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74261º / -118.53536º
UTM: Zone-11 N3845573 E359452
Area: 46.2 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** NW
Meridian: S

Location: UNNAMED CANYON TO E OF BALDWIN GRADE CYN, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION.

Owner/Manager: UNKNOWN

Occurrence No. 30 **Map Index:** 01161 **EO Index:** 15313

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.73524º / -118.52275º
UTM: Zone-11 N3844738 E360594
Area: 44.9 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** SE
Meridian: S

Location: NORTH LONG CANYON, SOUTH OF LOS ANGELES AQUEDUCT.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS.

Owner/Manager: UNKNOWN

Southern Sycamore Alder Riparian Woodland

Element Code: CTT62400CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 95 **Map Index:** 01197 **EO Index:** 15459

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-22

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.65990º / -118.51471º
UTM: Zone-11 N3836372 E361205
Area: 467.4 acres
Elevation: 3,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 31 **Qtr:** NW
Meridian: S

Location: FISH CREEK, FROM "THE POTHOLES" D/S TO ELIZABETH LAKE CANYON.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: LONG REACHES OF SCRUB W/CLOSED CANOPY QUERCUS AGRIFOLIA, ALNUS RHOMBIFOLIA & PLATANUS RACEMOSA.
General: THIS WAS OCC #095 OF CTT62400CA.
Owner/Manager: USFS-ANGELES NF

Southern Willow Scrub

Element Code: CTT63320CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 19 **Map Index:** 00901 **EO Index:** 15277

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.67847º / -118.60593º
UTM: Zone-11 N3838561 E352878
Area: 305.1 acres
Elevation: 3,720 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: XX **Qtr:** XX
Meridian: S

Location: FISH CANYON, N OF LITTLE BURNT PEAK D/S FOR ABOUT 3.5 MI.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: WILLOW SCRUB WITH BACCHARIS VIMINEA, LEPIDOSPARTUM SQUAMATUM AND WIDELY SCATTERED PLATANUS RACEMOSA.
General: GROUND TRUTH NEEDED. THIS WAS OCC #019 OF CTT63320CA.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 22 **Map Index:** 01613 **EO Index:** 15274

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.70119º / -118.40966º
UTM: Zone-11 N3840811 E370895
Area: 28.5 acres
Elevation: 2,880 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 14W
Section: 18 **Qtr:** NW
Meridian: S

Location: MYRICK CANYON, JUST EAST OF CALIFORNIA AQUEDUCT.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VERIFICATION.
Owner/Manager: UNKNOWN

Taxidea taxus

American badger — **Element Code:** AMAJF04010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4

Other Lists
CDFG Status: SC

Habitat Associations
General: MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.
Micro: NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.

Occurrence No. 26 **Map Index:** 56527 **EO Index:** 56543
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-05-16
Site: 1988-05-16
Record Last Updated: 2004-08-30

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68657º / -118.45049º
UTM: Zone-11 N3839243 E367132
Area:
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 22 **Qtr:** NE
Meridian: S

Location: 0.6 MILE NORTH OF LAKE HUGHES.
Ecological: HABITAT CONSISTS OF CHAPARRAL, DOMINATED BY ADENOSTOMA, ARCTOSTAPHYLOS, CEANOTHUS, CERCOCARPUS, AND PINUS COULTERI.
Threat: POSSIBLY THREATENED BY A WASTEWATER TREATMENT PLANT.
General: AN ACTIVE DEN WAS OBSERVED, 13-16 MAY 1988.
Owner/Manager: UNKNOWN

Occurrence No. 151 **Map Index:** 01549 **EO Index:** 56863
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1904-06-21
Site: 1904-06-21
Record Last Updated: 2004-09-20

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, ANTELOPE VALLEY.
Location Detail: MAPPED ACCORDING TO LAT/LONG GIVEN BY MVZ; MAX ERROR DISTANCE: 1 KM.
General: MALE COLLECTED (MVZ #7077) BY JOSEPH GRINNELL ON 21 JUN 1904. 1 COLLECTED (DATE UNKNOWN), LACM.
Owner/Manager: UNKNOWN

Occurrence No. 334 **Map Index:** 57756 **EO Index:** 57772
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 2004-10-27

Quad Summary: Neenach School (3411875/188D)
County Summary: Kern, Los Angeles

Lat/Long: 34.82942º / -118.57052º
UTM: Zone-11 N3855251 E356383
Radius: 1 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 09N
Range: 16W
Section: 34 **Qtr:** XX
Meridian: S

Location: ANTELOPE VALLEY, NEAR NEENACH, KERN COUNTY.
Location Detail: AREA MAPPED IS IN THE VICINITY OF THE LOS ANGELES AQUEDUCT TO THE NORTH AND THE KERN COUNTY LINE TO THE SOUTH.
General: 1 COLLECTED, FMNH (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO).
Owner/Manager: UNKNOWN

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G1
State: S3.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 5 **Map Index:** 01705 **EO Index:** 13582

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX
Record Last Updated: 1998-07-15

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RES. 2 MI E OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.
Location Detail: TOP & SIDES OF BUTTES. MAPPED AS GENERAL DUE TO SIZE.
Ecological: NASSELLA COVERS (5-30%). SLOPE 5-80%. SANDY-GRAVELLY SOIL.
Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.
General: FAIRLY UNDISTURBED. THIS WAS OCC #005 OF CTT42110CA.
Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Occurrence No. 22 **Map Index:** 01627 **EO Index:** 19752

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25
Record Last Updated: 1998-07-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71942º / -118.40731º
UTM: Zone-11 N3842830 E371139
Radius: 1/5 mile
Elevation: 2,900 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 14W
Section: 06 **Qtr:** SW
Meridian: S

Location: SE OF FAIRMONT. E OF RD 160 ON STEEP SLOPES. S OF ANTELOPE VALLEY POPPY RESERVE.
Location Detail: S & E ASPECT.
Ecological: NASSELLA CERNUA DOM. SOIL SANDY, GRAVELLY, SLOPE 60-80%. ASSOC. SPP: POA SECUNDA VAR. SECUNDA, SITANION, BROMUS TECTORUM & B. RUBENS. ESCHSCHOLZIA ON BLUFFS ABOVE RAVINES.
Threat: DRY FARMING AND SOME IRRIGATION ON FLATS. AREA BISECTED BY RAVINES.
General: THIS WAS OCC #022 OF CTT42110CA.
Owner/Manager: UNKNOWN

Occurrence No. 57 **Map Index:** 24322 **EO Index:** 6457

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1992-04-09
Site: 1992-04-09
Record Last Updated: 1998-07-15

Quad Summary: Neenach School (3411875/188D)
County Summary: Kern

Lat/Long: 34.85879º / -118.60543º
UTM: Zone-11 N3858559 E353243
Area: 207.2 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 09N
Range: 16W
Section: 19 **Qtr:** NE
Meridian: S

Location: WESTERN ANTELOPE VALLEY. 5 MILES DUE NORTH OF NEENACH SCHOOL AND HWY 138 BETWEEN 270TH AND 280TH STREETS.
Location Detail: SINGLE PATCH OF VEGETATION ON GRADUAL SOUTHWEST FACING SLOPE NEAR THE BASE OF THE BAJADA. SOUTH SLOPE OF THE TEHACHAPIS.
Ecological: SHRUB/PERENNIAL GRASS LAYER DOMINATED BY ACHNATHERUM SPECIOSUM (72%) WITH STEPHANOMERIA ALSO PRESENT. HERB LAYER INCLUDES ERODIUM CICUTARIUM, CAMISSONIA, ERIOGONUM, OENOTHERA DELTOIDES, BROMUS MADRITENSIS RUBENS.
Threat: POTENTIAL THREATS INCLUDE DEVELOPMENT AND CULTIVATION.
General: SOIL IS GRANITIC WITH SOME INDIVIDUAL MARBLE (DOLOMITE) STONES AND FINE ANGULAR DECOMPOSED GRANITE ON THE SURFACE. THIS WAS OCC #057 OF CTT42110CA.
Owner/Manager: PVT-TEJON RANCH CO

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status

Federal: None
State: None

NDDB Element Ranks

Global: G1
State: S3.1

Other Lists

Habitat Associations

General:
Micro:

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 77 **Map Index:** 00897 **EO Index:** 12450

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-03-31
Site: 1988-03-31
Record Last Updated: 1998-07-31

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72400º / -118.60150º
UTM: Zone-11 N3843603 E353364
Area: 191.4 acres
Elevation: 4,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 05 **Qtr:** W
Meridian: S

Location: N-FACING & NE-FACING HILLSIDE BETWEEN OAK FLAT & OAK GROVE CANYON, E OF PRATT CANYON.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY.

Threat: GRAZED BY CATTLE.

General: FIELD VERIFIED 1988. THIS WAS OCC #077 OF CTT71130CA.

Owner/Manager: UNKNOWN

Occurrence No. 80 **Map Index:** 00838 **EO Index:** 15109

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72713º / -118.63416º
UTM: Zone-11 N3843999 E350379
Area: 58.9 acres
Elevation: 4,280 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 17W
Section: 01 **Qtr:** XX
Meridian: S

Location: RICHARDSON CANYON, NEAR PINE GROVE RANCH.

Location Detail: HOLLAND, 1988 SAW SAME PLANT ASSEMBLAGE BUT MODIFIED BOUNDARY CONSIDERABLY.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINANA ACCORDING TO WIESLANDER SURVEY.

General: THIS WAS OCC #080 OF CTT71130CA.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 81 **Map Index:** 00817 **EO Index:** 15108

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72925º / -118.64631º
UTM: Zone-11 N3844252 E349271
Area: 36.4 acres
Elevation: 1,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 17W
Section: XX **Qtr:** XX
Meridian: S

Location: INTERMITTENT STREAM ASSOC W/COW SPRING, SOUTH OF OAKDALE CANYON ROAD.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA OVER ARTEMISIA TRIDENTATA ACCORDING TO WIESLANDER SURVEY. OPEN CANOPY QUERCUS LOBATA W/SCATTERED PINUS ABINANA PER HOLLAND, 1988.

General: THIS WAS OCC #081 OF CTT71130CA.

Owner/Manager: USFS-ANGELES NF

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 101 **Map Index:** 00690 **EO Index:** 13490

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.71256º / -118.55870º
UTM: Zone-11 N3842273 E357264
Area: 84.9 acres
Elevation: 4,120 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 17W
Section: 32 **Qtr:** NW
Meridian: S

Location: VICINITY OF QUAIL LAKE FIRE STATION, EAST OF BALD MOUNTAIN.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA WITH SCATTERED PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY, 1935 AND HOLLAND, 1988.

Threat: GRAZED BY CATTLE, 1988.

General: APPEARS TO BE PARTLY AN INHOLDING W/IN ANGELES NATIONAL FOREST. THIS WAS OCC #101 OF CTT71130CA.

Owner/Manager: UNKNOWN

Wildflower Field

Element Code: CTT42300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 1 **Map Index:** 01580 **EO Index:** 13322

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25
Record Last Updated: 1998-07-14

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71331º / -118.41674º
UTM: Zone-11 N3842164 E370266
Radius: 1/5 mile
Elevation: 2,950 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 12 **Qtr:** NE
Meridian: S

Location: SE OF FAIRMONT. SE OF JCT CA AQUEDUCT & AVE H.

Ecological: ESCHSCHOLZIA CALIFORNICA IN DENSE STANDS ON LEVEL TERRAIN. SLOPE 0.10%, ASPECT VARIOUS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: SOME OF THE AREA HAS BEEN PLOWED.

Owner/Manager: UNKNOWN

Occurrence No. 2 **Map Index:** 01705 **EO Index:** 7494

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX
Record Last Updated: 1998-07-14

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RES. 2 MI E OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.

Location Detail: MAPPED AS GENERAL DUE TO SIZE.

Ecological: IN FLATS AT BASE OF BUTTES. SLOPE 0-5%. SANDY-GRAVELLY SOIL. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.

Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Agelaius tricolor

tricolored blackbird

Element Code: ABPBXB0020

Status

Federal: None
State: None

NDDB Element Ranks

Global: G2G3
State: S2

Other Lists

CDFG Status: SC

Habitat Associations

General: HIGHLY COLONIAL SPECIES, MOST NUMBEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro: REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Occurrence No. 400 **Map Index:** 55403 **EO Index:** 55403

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 2000-04-22
Site: 2000-04-22

Record Last Updated: 2004-05-10

Quad Summary: Neenach School (3411875/188D)

County Summary: Los Angeles

Lat/Long: 34.79923º / -118.57496º
UTM: Zone-11 N3851909 E355925
Area:
Elevation: 2,893 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON

Township: 08N
Range: 16W
Section: 09 **Qtr:** NE
Meridian: S

Location: ALONG THE SHORE OF HOLIDAY LAKE. NORTH OF AVE B8, WEST OF 250TH ST W. ANTELOPE VALLEY

Ecological: HABITAT IS 75% CATTAIL AND 25% BULRUSH. MUCH VEGETATION HAS BEEN CLEARED.

General: POPULATION ESTIMATE OF 210 BIRDS.

Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 350 **Map Index:** 42520 **EO Index:** 42520
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-27
Site: 1999-06-27
Record Last Updated: 2000-07-12

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.80308º / -118.60715º
UTM: Zone-11 N3852383 E352987
Radius: 80 meters
Elevation: 2,910 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 08 **Qtr:** XX
Meridian: S

Location: SE OF THE INTERSECTION OF AVENUE B AND 270TH STREET WEST, ANTELOPE VALLEY.
Location Detail: BURROW IS LOCATED 20 FEET SOUTH OF THE INTERSECTION.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS; A STAND OF JOSHUA TREES FOUND NEARBY.
General: MALE OBSERVED AT THE BURROW DURING APR & MAY, STARTING ON 16 APR 1999. FEMALE AND YOUNG OBSERVED ON 6 JUN 1999. 2 ADULTS AND 6 JUVENILES OBSERVED ON 27 JUN 1999.
Owner/Manager: PVT?

Occurrence No. 351 **Map Index:** 42522 **EO Index:** 42522
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-11
Site: 1999-06-11
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.78435º / -118.57135º
UTM: Zone-11 N3850253 E356230
Radius: 2/5 mile
Elevation: 2,940 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 15 **Qtr:** XX
Meridian: S

Location: 250TH STREET WEST, BETWEEN AVENUE C AND THE CALIFORNIA AQUEDUCT, ANTELOPE VALLEY
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: BURROW WITH FLEDGED YOUNG OBSERVED ON 11 JUN 1999.
Owner/Manager: UNKNOWN

Occurrence No. 352 **Map Index:** 42523 **EO Index:** 42523
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-26
Site: 1999-03-26
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.77728º / -118.58243º
UTM: Zone-11 N3849485 E355204
Radius: 1/5 mile
Elevation: 3,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 16 **Qtr:** XX
Meridian: S

Location: NORTH OF AVENUE D, NEAR 256TH STREET WEST, ANTELOPE VALLEY.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: OCCUPIED BURROW OBSERVED ON 26 MAR 1999.
Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 985 **Map Index:** 69939 **EO Index:** 70770
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.82583º / -118.44481º
UTM: Zone-11 N3854680 E367874
Radius: 80 meters
Elevation: 2,635 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 09N
Range: 15W
Section: 35 **Qtr:** SW
Meridian: S

Location: 0.5 MILE EAST OF 180TH STREET WEST AND 1 MILE NORTH OF WEST AVENUE A, 9 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

Occurrence No. 986 **Map Index:** 69941 **EO Index:** 70771
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.83305º / -118.44981º
UTM: Zone-11 N3855488 E367429
Radius: 80 meters
Elevation: 2,635 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 09N
Range: 15W
Section: 34 **Qtr:** NE
Meridian: S

Location: SOUTH SIDE OF GASKELL ROAD, JUST WEST OF 180TH STREET WEST, 9.2 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

California macrophylla

round-leaved filaree

Element Code: PDGER01070

Status

Federal: None
State: None

NDDB Element Ranks

Global: G3
State: S3.1

Other Lists

CNPS List: 1B.1

Habitat Associations

General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.
Micro: CLAY SOILS. 15-1200M.

Occurrence No. 103 **Map Index:** 75412 **EO Index:** 76415

Dates Last Seen

Element: 2003-XX-XX
Site: 2003-XX-XX

Occ Rank: Good
*** SENSITIVE ***
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 2009-06-05

Quad Summary: La Liebre Ranch (3411876/188C)
County Summary: Kern

*** SENSITIVE ***

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.

Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological: ALLUVIAL TERRACES WITH GENTLE TO MODERATE SLOPES. CRACKED CLAY SOILS. ASSOC WITH ACHYRACHAENA MOLLIS, MICROSERIS DOUGLASII, LAYIA, LUPINUS MICROCARPUS, ANCISTROCARPHUS FILAGINEUS, GUILLENIA LEMMONII, PHACELIA CILIATA, MONOLOPIA LANCEOLATA.

Threat: THREATENED BY EXOTIC PLANTS AND POSSBILE FUTURE CONSTRUCTION WORK.

Owner/Manager:

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 3 **Map Index:** 01210 **EO Index:** 18563

Dates Last Seen
Element: 1972-XX-XX
Site: 1979-06-12
Record Last Updated: 1989-08-11

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69858º / -118.50925º
UTM: Zone-11 N3840654 E361769
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 18 **Qtr:** N
Meridian: S

Location: 0.1 MI SE OF PINE CYN FOREST STATION, W OF LAKE HUGHES, ALONG HWY N2.
Ecological: IN WOODLAND. ASSOCIATED WITH QUERCUS CHRYSOLEPIS, POISON OAK AND RHAMNUS CROCEA.
Threat: HEAVY GRAZING HAS ELIMINATED PLANT ABOVE FENCE LINE.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 16 **Map Index:** 01386 **EO Index:** 18554

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-11

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69948º / -118.46240º
UTM: Zone-11 N3840691 E366061
Radius: 2/5 mile
Elevation: 4,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 15 **Qtr:** E
Meridian: S

Location: TROEDEL SPRINGS PLATEAU, PORTAL RIDGE.
Location Detail: MAPPED IN VICINITY OF TROEDEL SPRINGS; LOCATION VAGUE.
General: NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No. 17 **Map Index:** 01262 **EO Index:** 18550

Dates Last Seen
Element: 1982-06-17
Site: 1982-06-17
Record Last Updated: 2007-09-10

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69831º / -118.49703º
UTM: Zone-11 N3840607 E362888
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 17 **Qtr:** NW
Meridian: S

Location: 0.7 MI UP DIRT RD NORTH OF PINE CANYON RD, 0.3 TO 0.5 MI E OF REST AREA.
Ecological: IN LOOSE, LIGHT SOIL AND ROCKY OUTCROPS; ASSOCIATED WITH ERIOGONUM FASCICULATUM, YUCCA WHIPPLEI, QUERCUS DUMOSA, AVENA SP., AND CERCOCARPUS BETULOIDES.
General: EXCELLENT TO GOOD CONDITION IN 1982.
Owner/Manager: USFS-ANGELES NF

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 28 **Map Index:** 01047 **EO Index:** 18540

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67891º / -118.45222º
UTM: Zone-11 N3838395 E366961
Radius: 2/5 mile
Elevation: 1,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NEAR JCT LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 29 **Map Index:** 01019 **EO Index:** 12608

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68865º / -118.47912º
UTM: Zone-11 N3839512 E364512
Radius: 2/5 mile
Elevation: 2,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 16 **Qtr:** SW
Meridian: S

Location: 1.8 MI NW OF JCT OF LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Falco mexicanus

prairie falcon — **Element Code:** ABNKD06090

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.
Micro: BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

Occurrence No. 239 **Map Index:** 00792 **EO Index:** 26173

Dates Last Seen
Element: 1980-05-29
Site: 1980-05-29
Record Last Updated: 1989-08-10

*** SENSITIVE ***

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

*** SENSITIVE ***

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.
Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Owner/Manager:

Occurrence No. 240 **Map Index:** 00764 **EO Index:** 26172

Dates Last Seen
Element: 1980-06-02
Site: 1980-06-02
Record Last Updated: 1989-08-10

*** SENSITIVE ***

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

*** SENSITIVE ***

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.
Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Owner/Manager:

Lasiurus cinereus

hoary bat

Element Code: AMACC05030

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4?

Other Lists
CDFG Status:

Habitat Associations
General: PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER & OPEN AREAS OR HABITAT EDGES FOR FEEDING.
Micro: ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Occurrence No. 50 **Map Index:** 68504 **EO Index:** 68809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1938-07-15
Site: 1938-07-15
Record Last Updated: 2007-03-16

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67609º / -118.44615º
UTM: Zone-11 N3838075 E367513
Radius: 4/5 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 23 **Qtr:** XX
Meridian: S

Location: LAKE HUGHES.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED AS BEST ESTIMATE AROUND COMMUNITY OF LAKE HUGHES.
General: 1 MALE SPECIMEN (LACM #5003) COLLECTED BY J. VON BLOEKER ON 15 JUL 1938.
Owner/Manager: UNKNOWN

Leptosiphon serrulatus

Madera leptosiphon

Element Code: PDPLM09130

Status

Federal: None
State: None

NDDB Element Ranks

Global: G1?
State: S1?

Other Lists

CNPS List: 1B.2

Habitat Associations

General: CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.

Micro: DRY SLOPES; OFTEN ON DECOMPOSED GRANITE IN WOODLAND. 80-1575M.

Occurrence No. 22 **Map Index:** 74657 **EO Index:** 75589

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 1935-05-20
Site: 1935-05-20

Record Last Updated: 2009-04-20

Quad Summary: Liebre Twins (3411885/188A), Cummings Mtn. (3511815/213D), Tejon Ranch (3511816/213C), Winters Ridge (3411886/188B)

County Summary: Kern

Lat/Long: 34.96987º / -118.63274º
UTM: Zone-11 N3870920 E350948
Radius: 5 mile
Elevation: 1,000 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 10N
Range: 16W
Section: 07 **Qtr:** XX
Meridian: S

Location: TEHACHAPI MOUNTAINS.

Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS TEHACHAPI MOUNTAINS; THIS IS A LARGE AREA AND NO ADDITIONAL INFORMATION WAS GIVEN ON HERBARIUM LABEL TO NARROW DOWN WHERE IN THE TEHACHAPI MTNS THIS PLANT OCCURS.

Ecological: N SLOPE AMONG SCATTERED OAKS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1935 ANDERSON COLLECTION. THIS IS A SOUTHERLY EXTENSION OF THE KNOWN RANGE OF THE PLANT; ID SHOULD BE DOUBLE-CHECKED, ANNOTATED IN 1941 BY MASON AS L. SERRULATUS. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Perognathus alticolus inexpectatus

Tehachapi pocket mouse

Element Code: AMAFD01082

Status
Federal: None
State: None

NDDB Element Ranks
Global: G1G2T1T2
State: S1S2

Other Lists
CDFG Status: SC

Habitat Associations
General: ARID ANNUAL GRASSLAND & DESERT SHRUB COMMUNITIES, BUT ALSO TAKEN IN FALLOW GRAIN FIELD & IN RUSSIAN THISTLE.
Micro: BURROWS FOR COVER & NESTING. AESTIVATES AND HIBERNATES DURING EXTREME WEATHER. FORAGES ON OPEN GROUND & UNDER SHRUBS.

Occurrence No. 10 **Map Index:** 59036 **EO Index:** 23897
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1938-07-16
Site: 1981-07-24
Record Last Updated: 2006-08-07

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66906º / -118.42287º
UTM: Zone-11 N3837265 E369635
Area:
Elevation: 3,400 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 25 **Qtr:** XX
Meridian: S

Location: VICINITY OF ELIZABETH LAKE & HUGHES LAKE.
Location Detail: IN 1981, SULENTICH TRAPPED 0.25 MI NE LAKE HUGHES AT 3375 FT AND HAD NO SUCCESS. ALSO NO SUCCESS 200 M NORTH OF WEST END LAKE ELIZABETH AT 3400 FT.
General: LACM # 5017-5019 COLLECTED 15 JULY TO 16 JULY 1938 FROM ELIZABETH LAKE AND # 5020 COLLECTED 14 JULY 1938 FROM HUGHES LAKE.
Owner/Manager: USFS-ANGELES NF, PVT

Occurrence No. 18 **Map Index:** 65730 **EO Index:** 65809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1965-05-08
Site: 1965-05-08
Record Last Updated: 2006-08-09

Quad Summary: La Liebre Ranch (3411876/188C)
County Summary: Los Angeles

Lat/Long: 34.78328º / -118.65792º
UTM: Zone-11 N3850262 E348306
Radius: 1 mile
Elevation: 3,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 17W
Section: 14 **Qtr:** XX
Meridian: S

Location: ABOUT 5 ROAD MILES EAST OF QUAIL LAKE ALONG HWY 138.
Location Detail: LOCATION GIVEN ONLY AS "5 MI E QUAIL LAKE". MAPPED AT THE COORDINATES GIVEN BY MANIS WITH A LOCATION UNCERTAINTY OF 6 MILES.
General: LACM #48790 COLLECTED 8 MAY 1965 BY R. G. HANNUM.
Owner/Manager: UNKNOWN

Phrynosoma blainvillii

coast horned lizard

Element Code: ARACF12100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4G5
State: S3S4

Other Lists
CDFG Status: SC

Habitat Associations
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.

Occurrence No. 157 **Map Index:** 01549 **EO Index:** 28059
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 1989-08-10

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, 4 MI NNE OF LAKE HUGHES.
General: SDNHM SPECIMEN; DATE OF COLLECTION UNKNOWN.
Owner/Manager: UNKNOWN

Occurrence No. 458 **Map Index:** 46981 **EO Index:** 46981
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2001-09-27
Site: 2001-09-27
Record Last Updated: 2002-01-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66957º / -118.43252º
UTM: Zone-11 N3837334 E368752
Radius: 80 meters
Elevation: 3,287 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT

Township: 07N
Range: 15W
Section: 26 **Qtr:** NE
Meridian: S

Location: PAINTED TURTLE CAMP, LAKE HUGHES.
Ecological: HABITAT CONSISTS OF RECOVERING CHAPARRAL.
Threat: THREATENED BY OFF-ROAD VEHICLES.
General: 1 JUVENILE OBSERVED FORAGING IN OPEN CHAPARRAL ON 27 SEP 2001.
Owner/Manager: PVT

Southern Cottonwood Willow Riparian Forest

Element Code: CTT61330CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 36 **Map Index:** 01077 **EO Index:** 15815

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-02
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Warm Springs Mountain (3411855/163D), Lake Hughes (3411864/162B), Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.63591º / -118.52912º
UTM: Zone-11 N3833731 E359843
Area: 380.5 acres
Elevation: 2,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 06N
Range: 16W
Section: XX **Qtr:** XX
Meridian: S

Location: ELIZABETH LAKE CANYON, FROM NEAR DEER CYN D/S TO PROSPECT CREEK.

Ecological: ALNUS RHOMBIFOLIA ALONG FLOWING CR; SCATTERED POPULUS FREMONTII OVER BACCHARIS VIMINEA ON FLOODPLAIN. SYCAMORES AND ALDERS FOR SHORT WAY D/S OF FISH CYN. QUERCUS AGRIFOLIA AT OUTER FLOODPLAIN EDGES BELOW RED FOX CYN.

Threat: RIPRAP ON N SHORE FOR 1/2 MI BELOW CAMPGROUND. WIESLANDER/HOLLAND MAPS SIMILIAR.

General: THIS WAS OCC #036 OF CTT61330CA.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 37 **Map Index:** 01082 **EO Index:** 15813

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-20

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72079º / -118.55064º
UTM: Zone-11 N3843175 E358016
Area: 113.3 acres
Elevation: 3,760 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 16W
Section: 02 **Qtr:** S
Meridian: S

Location: KINGS CANYON, WEST OF KINGS CYN RANCH FOR ABOUT 1.3 MI.

Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOGRAPHS.

Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: FIELD VERIFICATION NEEDED.

Owner/Manager: UNKNOWN

Occurrence No. 38 **Map Index:** 01450 **EO Index:** 15811

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1988-04-02
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66348º / -118.45549º
UTM: Zone-11 N3836688 E366637
Area: 200.9 acres
Elevation: 3,120 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 15W
Section: 27 **Qtr:** E
Meridian: S

Location: ELIZABETH LAKE CANYON, FROM HUGHES LAKE D/S FOR ABOUT 1.5 MI, & TRIBUTARY.

Ecological: COTTONWOODS OVER WILLOW SEEN 1988. NO WATER IN STREAM ON DAY OF APRIL VISIT. WIESLANDER MAPPED

Threat: PEAR ORCHARDS ENCROACHING

General: THIS WAS OCC #038 OF CTT61330CA.

Owner/Manager: PVT IN USFS-ANGELES NF

Southern Cottonwood Willow Riparian Forest

Element Code: CTT61330CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 39 **Map Index:** 01447 **EO Index:** 15812

Dates Last Seen
Element: 1935-XX-XX
Site: 1988-04-02

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown

Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67398º / -118.45439º
UTM: Zone-11 N3837852 E366755
Area: 63.1 acres
Elevation: 3,400 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NORTH & WEST SHORE HUGHES LAKE & SURROUNDINGS.

Location Detail: ONCE CONTINUOUS W/ OCC 038.

Ecological: WIESLANDER MAPPED AS CLOSED CANOPY WILLOWS. POPULUS FREMONTII PRESENT BUT UNDERSTORY DEVELOPED. EXTIRPATED AS A NATURAL COMMUNITY.

General: THIS WAS OCC #39 OF CTT61330CA.

Owner/Manager: PVT

Southern Riparian Forest

Element Code: CTT61300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 14 **Map Index:** 01080 **EO Index:** 16035

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.70338º / -118.54557º
UTM: Zone-11 N3841237 E358451
Area: 61.4 acres
Elevation: 4,170 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 11 **Qtr:** XX
Meridian: S

Location: HIDEWAY CANYON, FOR ABOUT 0.9 MI U/S (S) OF PINE CANYON RD.
Location Detail: BOUNDARY REPRESENTS EXTENT AS INTERPRETED FROM 1978 AERIAL PHOTOS.
Ecological: DENSE COVER. VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VISIT.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 15 **Map Index:** 01150 **EO Index:** 16036

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1989-08-10

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69571º / -118.52674º
UTM: Zone-11 N3840360 E360162
Area: 37.7 acres
Elevation: 4,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 13 **Qtr:** E
Meridian: S

Location: SHAKE CANYON, BETWEEN UPPER & LOWER SHAKE CAMPGROUNDS.
Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOS.
Ecological: VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VISIT.
Owner/Manager: USFS-ANGELES NF

Southern Riparian Scrub

Element Code: CTT63300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 28 **Map Index:** 01096 **EO Index:** 15316

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Neenach School (3411875/188D), Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74258º / -118.53965º
UTM: Zone-11 N3845576 E359059
Area: 68.7 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 35 **Qtr:** E
Meridian: S

Location: BALDWIN GRADE CANYON, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION.

Owner/Manager: UNKNOWN

Occurrence No. 29 **Map Index:** 01113 **EO Index:** 15314

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74261º / -118.53536º
UTM: Zone-11 N3845573 E359452
Area: 46.2 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** NW
Meridian: S

Location: UNNAMED CANYON TO E OF BALDWIN GRADE CYN, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION.

Owner/Manager: UNKNOWN

Occurrence No. 30 **Map Index:** 01161 **EO Index:** 15313

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.73524º / -118.52275º
UTM: Zone-11 N3844738 E360594
Area: 44.9 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** SE
Meridian: S

Location: NORTH LONG CANYON, SOUTH OF LOS ANGELES AQUEDUCT.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO

General: EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS.

Owner/Manager: UNKNOWN

Southern Sycamore Alder Riparian Woodland

Element Code: CTT62400CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 95 **Map Index:** 01197 **EO Index:** 15459

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-22

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.65990º / -118.51471º
UTM: Zone-11 N3836372 E361205
Area: 467.4 acres
Elevation: 3,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 31 **Qtr:** NW
Meridian: S

Location: FISH CREEK, FROM "THE POTHOLES" D/S TO ELIZABETH LAKE CANYON.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: LONG REACHES OF SCRUB W/CLOSED CANOPY QUERCUS AGRIFOLIA, ALNUS RHOMBIFOLIA & PLATANUS RACEMOSA.
General: THIS WAS OCC #095 OF CTT62400CA.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 102 **Map Index:** 00833 **EO Index:** 15454

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-22

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A), Whitaker Peak (3411856/163C), Liebre Mtn. (3411866/163B), Warm Springs Mountain (3411855/163D)
County Summary: Los Angeles

Lat/Long: 34.64800º / -118.60544º
UTM: Zone-11 N3835180 E352869
Area: 1,061.0 acres
Elevation: 2,040 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 06N
Range: 17W
Section: 12 **Qtr:** XX
Meridian: S

Location: FISH CYN, SOUTH OF PIANOBOX PROSPECT & EAST FORK FISH CYN.
Ecological: OPEN CANOPY ALNUS RHOMBIFOLIA & BACCHARIS VIMINEA BELOW CAMPGROUND ACC TO WIESLANDER SURVEY. 30-40% TREE COVER PER 1978 AIR PHOTOS ABOVE CAMP, OPEN ALNUS, PLATANUS, POPULUS, BACCHARIS & ERIOGONUM FASCIC PER WIESLANDER; TREES 10-30%, 1978.
Threat: CAMPGROUND DISTURBS.
General: RECENT GROUND TRUTH NEEDED. THIS WAS OCC #102 OF CTT62400CA.
Owner/Manager: USFS-ANGELES NF

Southern Willow Scrub

Element Code: CTT63320CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 19 **Map Index:** 00901 **EO Index:** 15277

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.67847º / -118.60593º
UTM: Zone-11 N3838561 E352878
Area: 305.1 acres
Elevation: 3,720 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: XX **Qtr:** XX
Meridian: S

Location: FISH CANYON, N OF LITTLE BURNT PEAK D/S FOR ABOUT 3.5 MI.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: WILLOW SCRUB WITH BACCHARIS VIMINEA, LEPIDOSPARTUM SQUAMATUM AND WIDELY SCATTERED PLATANUS RACEMOSA.
General: GROUND TRUTH NEEDED. THIS WAS OCC #019 OF CTT63320CA.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 22 **Map Index:** 01613 **EO Index:** 15274

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.70119º / -118.40966º
UTM: Zone-11 N3840811 E370895
Area: 28.5 acres
Elevation: 2,880 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 14W
Section: 18 **Qtr:** NW
Meridian: S

Location: MYRICK CANYON, JUST EAST OF CALIFORNIA AQUEDUCT.
Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.
Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO
General: NEEDS FIELD VERIFICATION.
Owner/Manager: UNKNOWN

Taxidea taxus

American badger — **Element Code:** AMAJF04010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4

Other Lists
CDFG Status: SC

Habitat Associations
General: MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.
Micro: NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.

Occurrence No. 26 **Map Index:** 56527 **EO Index:** 56543
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-05-16
Site: 1988-05-16
Record Last Updated: 2004-08-30

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68657º / -118.45049º
UTM: Zone-11 N3839243 E367132
Area:
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 22 **Qtr:** NE
Meridian: S

Location: 0.6 MILE NORTH OF LAKE HUGHES.
Ecological: HABITAT CONSISTS OF CHAPARRAL, DOMINATED BY ADENOSTOMA, ARCTOSTAPHYLOS, CEANOTHUS, CERCOCARPUS, AND PINUS COULTERI.
Threat: POSSIBLY THREATENED BY A WASTEWATER TREATMENT PLANT.
General: AN ACTIVE DEN WAS OBSERVED, 13-16 MAY 1988.
Owner/Manager: UNKNOWN

Occurrence No. 151 **Map Index:** 01549 **EO Index:** 56863
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1904-06-21
Site: 1904-06-21
Record Last Updated: 2004-09-20

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, ANTELOPE VALLEY.
Location Detail: MAPPED ACCORDING TO LAT/LONG GIVEN BY MVZ; MAX ERROR DISTANCE: 1 KM.
General: MALE COLLECTED (MVZ #7077) BY JOSEPH GRINNELL ON 21 JUN 1904. 1 COLLECTED (DATE UNKNOWN), LACM.
Owner/Manager: UNKNOWN

Occurrence No. 334 **Map Index:** 57756 **EO Index:** 57772
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 2004-10-27

Quad Summary: Neenach School (3411875/188D)
County Summary: Kern, Los Angeles

Lat/Long: 34.82942º / -118.57052º
UTM: Zone-11 N3855251 E356383
Radius: 1 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 09N
Range: 16W
Section: 34 **Qtr:** XX
Meridian: S

Location: ANTELOPE VALLEY, NEAR NEENACH, KERN COUNTY.
Location Detail: AREA MAPPED IS IN THE VICINITY OF THE LOS ANGELES AQUEDUCT TO THE NORTH AND THE KERN COUNTY LINE TO THE SOUTH.
General: 1 COLLECTED, FMNH (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO).
Owner/Manager: UNKNOWN

Toxostoma lecontei

Le Conte's thrasher

Element Code: ABPBK06100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3

Other Lists
CDFG Status: SC

Habitat Associations
General: DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
Micro: COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

Occurrence No. 57 **Map Index:** 01703 **EO Index:** 24519
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1968-09-21
Site: 1968-09-21
Record Last Updated: 1989-08-10

Quad Summary: Willow Springs (3411883/187A), Tylerhorse Canyon (3411884/187B), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.87886º / -118.38201º
UTM: Zone-11 N3860480 E373699
Radius: 1 mile
Elevation: 2,720 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 09N
Range: 14W
Section: 08 **Qtr:** SE
Meridian: S

Location: 5 MILES WEST OF WILLOW SPRINGS, IN THE VICINITY OF THE INTERSECTION OF MEERS ROAD AND 104TH STREET WEST.
General: LACM SPECIMEN #80669.
Owner/Manager: UNKNOWN

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G1
State: S3.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 5 **Map Index:** 01705 **EO Index:** 13582

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 1998-07-15

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RES. 2 MI E OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.
Location Detail: TOP & SIDES OF BUTTES. MAPPED AS GENERAL DUE TO SIZE.
Ecological: NASSELLA COVERS (5-30%). SLOPE 5-80%. SANDY-GRAVELLY SOIL.
Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.
General: FAIRLY UNDISTURBED. THIS WAS OCC #005 OF CTT42110CA.
Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Occurrence No. 22 **Map Index:** 01627 **EO Index:** 19752

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 1998-07-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71942º / -118.40731º
UTM: Zone-11 N3842830 E371139
Radius: 1/5 mile
Elevation: 2,900 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 14W
Section: 06 **Qtr:** SW
Meridian: S

Location: SE OF FAIRMONT. E OF RD 160 ON STEEP SLOPES. S OF ANTELOPE VALLEY POPPY RESERVE.
Location Detail: S & E ASPECT.
Ecological: NASSELLA CERNUA DOM. SOIL SANDY, GRAVELLY, SLOPE 60-80%. ASSOC. SPP: POA SECUNDA VAR. SECUNDA, SITANION, BROMUS TECTORUM & B. RUBENS. ESCHSCHOLZIA ON BLUFFS ABOVE RAVINES.
Threat: DRY FARMING AND SOME IRRIGATION ON FLATS. AREA BISECTED BY RAVINES.
General: THIS WAS OCC #022 OF CTT42110CA.
Owner/Manager: UNKNOWN

Occurrence No. 57 **Map Index:** 24322 **EO Index:** 6457

Dates Last Seen
Element: 1992-04-09
Site: 1992-04-09

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 1998-07-15

Quad Summary: Neenach School (3411875/188D)
County Summary: Kern

Lat/Long: 34.85879º / -118.60543º
UTM: Zone-11 N3858559 E353243
Area: 207.2 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 09N
Range: 16W
Section: 19 **Qtr:** NE
Meridian: S

Location: WESTERN ANTELOPE VALLEY. 5 MILES DUE NORTH OF NEENACH SCHOOL AND HWY 138 BETWEEN 270TH AND 280TH STREETS.
Location Detail: SINGLE PATCH OF VEGETATION ON GRADUAL SOUTHWEST FACING SLOPE NEAR THE BASE OF THE BAJADA. SOUTH SLOPE OF THE TEHACHAPIS.
Ecological: SHRUB/PERENNIAL GRASS LAYER DOMINATED BY ACHNATHERUM SPECIOSUM (72%) WITH STEPHANOMERIA ALSO PRESENT. HERB LAYER INCLUDES ERODIUM CICUTARIUM, CAMISSONIA, ERIOGONUM, OENOTHERA DELTOIDES, BROMUS MADRITENSIS RUBENS.
Threat: POTENTIAL THREATS INCLUDE DEVELOPMENT AND CULTIVATION.
General: SOIL IS GRANITIC WITH SOME INDIVIDUAL MARBLE (DOLOMITE) STONES AND FINE ANGULAR DECOMPOSED GRANITE ON THE SURFACE. THIS WAS OCC #057 OF CTT42110CA.
Owner/Manager: PVT-TEJON RANCH CO

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status

Federal: None
State: None

NDDB Element Ranks

Global: G1
State: S3.1

Other Lists

Habitat Associations

General:
Micro:

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 77 **Map Index:** 00897 **EO Index:** 12450

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-03-31
Site: 1988-03-31
Record Last Updated: 1998-07-31

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72400º / -118.60150º
UTM: Zone-11 N3843603 E353364
Area: 191.4 acres
Elevation: 4,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 05 **Qtr:** W
Meridian: S

Location: N-FACING & NE-FACING HILLSIDE BETWEEN OAK FLAT & OAK GROVE CANYON, E OF PRATT CANYON.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY.

Threat: GRAZED BY CATTLE.

General: FIELD VERIFIED 1988. THIS WAS OCC #077 OF CTT71130CA.

Owner/Manager: UNKNOWN

Occurrence No. 79 **Map Index:** 00766 **EO Index:** 28767

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: La Liebre Ranch (3411876/188C), Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.74608º / -118.67092º
UTM: Zone-11 N3846156 E347048
Radius: 1 mile
Elevation: 3,680 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 17W
Section: XX **Qtr:** XX
Meridian: S

Location: SAN ANDREAS RIFT ZONE, VICINITY OF RANCHO CORONA DEL VALLE.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA OVER CHRYSOTHAMNUS NAUSEOSUS AND/OR GRASS ACCORDING TO WIESLANDER SURVEY. QUERCUS LOBATA <15%, C. NAUSEOSUS >40%.

Threat: SITE HEAVILY GRAZED.

General: THIS WAS OCC #079 OF CTT71130CA.

Owner/Manager: UNKNOWN

Occurrence No. 80 **Map Index:** 00838 **EO Index:** 15109

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72713º / -118.63416º
UTM: Zone-11 N3843999 E350379
Area: 58.9 acres
Elevation: 4,280 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 17W
Section: 01 **Qtr:** XX
Meridian: S

Location: RICHARDSON CANYON, NEAR PINE GROVE RANCH.

Location Detail: HOLLAND, 1988 SAW SAME PLANT ASSEMBLAGE BUT MODIFIED BOUNDARY CONSIDERABLY.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINANA ACCORDING TO WIESLANDER SURVEY.

General: THIS WAS OCC #080 OF CTT71130CA.

Owner/Manager: USFS-ANGELES NF

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 81 **Map Index:** 00817 **EO Index:** 15108

Dates Last Seen
Occ Rank: Unknown — **Element:** 1988-04-01
Origin: Natural/Native occurrence — **Site:** 1988-04-01
Presence: Presumed Extant
Trend: Unknown — **Record Last Updated:** 1998-07-31

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72925º / -118.64631º — **Township:** 08N
UTM: Zone-11 N3844252 E349271 — **Range:** 17W
Area: 36.4 acres — **Mapping Precision**SPECIFIC — **Section:** XX — **Qtr:** XX
Elevation: 1,200 ft — **Symbol Type:**POLYGON — **Meridian:** S

Location: INTERMITTENT STREAM ASSOC W/COW SPRING, SOUTH OF OAKDALE CANYON ROAD.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA OVER ARTEMISIA TRIDENTATA ACCORDING TO WIESLANDER SURVEY. OPEN CANOPY QUERCUS LOBATA W/SCATTERED PINUS ABINANA PER HOLLAND, 1988.

General: THIS WAS OCC #081 OF CTT71130CA.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 101 **Map Index:** 00690 **EO Index:** 13490

Dates Last Seen
Occ Rank: Unknown — **Element:** 1988-04-01
Origin: Natural/Native occurrence — **Site:** 1988-04-01
Presence: Presumed Extant
Trend: Unknown — **Record Last Updated:** 1998-07-31

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.71256º / -118.55870º — **Township:** 08N
UTM: Zone-11 N3842273 E357264 — **Range:** 17W
Area: 84.9 acres — **Mapping Precision**SPECIFIC — **Section:** 32 — **Qtr:** NW
Elevation: 4,120 ft — **Symbol Type:**POLYGON — **Meridian:** S

Location: VICINITY OF QUAIL LAKE FIRE STATION, EAST OF BALD MOUNTAIN.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA WITH SCATTERED PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY, 1935 AND HOLLAND, 1988.

Threat: GRAZED BY CATTLE, 1988.

General: APPEARS TO BE PARTLY AN INHOLDING W/IN ANGELES NATIONAL FOREST. THIS WAS OCC #101 OF CTT71130CA.

Owner/Manager: UNKNOWN

Wildflower Field

Element Code: CTT42300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 1 **Map Index:** 01580 **EO Index:** 13322

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25
Record Last Updated: 1998-07-14

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71331º / -118.41674º
UTM: Zone-11 N3842164 E370266
Radius: 1/5 mile
Elevation: 2,950 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 12 **Qtr:** NE
Meridian: S

Location: SE OF FAIRMONT. SE OF JCT CA AQUEDUCT & AVE H.

Ecological: ESCHSCHOLZIA CALIFORNICA IN DENSE STANDS ON LEVEL TERRAIN. SLOPE 0.10%, ASPECT VARIOUS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: SOME OF THE AREA HAS BEEN PLOWED.

Owner/Manager: UNKNOWN

Occurrence No. 2 **Map Index:** 01705 **EO Index:** 7494

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX
Record Last Updated: 1998-07-14

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RES. 2 MI E OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.

Location Detail: MAPPED AS GENERAL DUE TO SIZE.

Ecological: IN FLATS AT BASE OF BUTTES. SLOPE 0-5%. SANDY-GRAVELLY SOIL. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.

Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Appendix D – Plant List

Table 3
List of Plants Observed During Botanical Survey

Family	Scientific Name	Common Name	Note[1]
GYMNOSPERMS			
Cupressaceae	*Juniperus californica*	California juniper	N
Ephedraceae	*Ephedra nevadensis*	Mormon tea	N
Pinaceae	*Pinus* spp.	Pine	I
DICOTS			
Asclepiadaceae	*Asclepias erosa*	Desert milkweed	N
	Centaruea solstialis	Yellow starthistle	I
Asteraceae	*Chaenactis fremontii*	Desert pincushion	N
	Chamomilla suaveolens	Pineapple weed	I
	Chrysothamnus nauseosus ssp. ceruminosus	Rubber rabbitbrush	N
	Encelia farinosa	Brittlebush	N
	Ericameria linearifolius	Interior Goldenbush	N
	Gnaphalium palustre	Western marsh cudweed	N
	Helianthus californicus	California sunflower	N
	Lactuca serriola	Prickly lettuce	I
	Lasthenia californica	Goldfields	N
	Malacothrix glabrata	Desert dandelion	N
Boraginaceae	*Amsinckia menziesii var. menziesii*	Rancher's fireweed	N
	Amsinckia tessellata	Bristly fiddleneck	I
	Cryptantha angustifolia	Panamint catseye	N
	Cryptantha micrantha	Purpleroot cryptantha	N
	Pectocarya recurvata	Curvenut colmbsead	N
Brassicaceae	*Descurainia pinnata*	Tansy mustard	N
	Guillenia lasiophylla	California mustard	N
	Sysimbirum altissimum	Tumblemustard	I
	Sysimbrium irio	London rocket	I
Cactaceae	*Opuntia echinocarpa*	Silver cholla	N
Capparaceae	*Isomeris arborea*	Bladderpod	N
Chenopodiaceae	*Salsola tragus*	Russian thistle	I
Cucurbitaceae	*Cucurbita palmata*	Coyote melon	N
Cuscutaceae	*Cuscuta sp.*	Dodder	N
Euphorbiaceae	*Chamaesyce albomarginata*	Rattlesnake weed	N
	Eremocarpus setigerus	Dove weed	N
Fabaceae	*Astraguls douglassi*	Douglas milkvetch	N

Table 3
List of Plants Observed During Botanical Survey

	Lathyrus lanszwertii	Nevada pea	N
	Lotus strigosus	Strigose birds'-foot trefoil	I
	Lupinus microcarpus	Chick lupine	N
	Robinia pseudoacacia	Black locust	I
Geraniaceae	*Erodium botrys*	Longbeak stork's bill	I
	Erodium cicutarium	Filaree	I
Hydrophyllaceae	*Phacelia distans*	Common phacelia	N
Lamiaceae	*Salvia columbariae*	Chia	N
Lamiaceae	*Marrubium vulgare*	Horehound	I
Loasaceae	*Mentzelia jonesii*	Blazing star	N
Nyctaginaceae	*Mirabilis multiflora*	Giant 4 o'clock	N
Onagraceae	*Camissinia subacaulis*	Long-leaved evening primrose	N
	Camissonia palmeri	Desert suncups	N
	Oenetheria deltoides	Dune primrose	N
Papaveraceae	*Argemone corymbrosa*	Prickly poppy	N
	Eschscholzia californica	California poppy	N
Polemoniaceae	*Gilia achilleifolia spp. achilleifolia*	California gilia	N
	Gilia achilleifolia spp. multicaulis	California gilia	N
	Gilia capillaries	Miniature gilia	N
Polygonaceae	*Eriogonum angulosum*	Wild buckwheat	N
	Eriogonum faciculatum	California buckwheat	N
	Eriogonum inflatum	Desert trumpet	N
	Eriogonum maculatum	Spotted buckwheat	N
Salicaceae	*Populus spp.*	Cottonwood	N
Scrophulariaceae	*Castilleja exserta*	Purple owl's clover	N
Solaneaceae	*Datura stramonium*	Jimson weed	I
Tamaricaceae	*Tamarix ramosissima*	Tamarisk	I
Zygophyllaceae	*Tribulus terrestris*	Puncturevine	I
MONOCOTS			
Liliaceae	*Yucca brevifolia*	Joshua tree	N
Poaceae	*Avena fatua*	Wild oat	N
	Bromus rubens	Red brome	I
	Bromus tectorum	Cheatgrass	I
	Hesperostipa comata	Needle-and-thread	N
	Hordeum jubatum	Foxtail barley	I
	Hordeum murinum ssp. leporinum	Barley	I
	Pleuraphis rigida	Big galleta	N

Table 3
List of Plants Observed During Botanical Survey

	Poa annua	Annual bentgrass	N

Note
1: N = Native; I = Introduced; -- = Could not be determined.

Appendix E – Site Photographs

Photo 1: Viewing south from the center of the Western Parcel within non-native grassland.

Photo 2: Viewing north from the center of the Western Parcel within non-native grassland.

Photo 3: Viewing west at large ephemeral wash dominated by Russian thistle located north of the Western Parcel, but outside of the Project site.

Photo 4: Viewing east at large ephemeral wash dominated by Russian thistle located north of the Western Parcel, but outside of the Project site

Photo 5: Viewing west from the eastern portion of the Western parcel within rabbitbrush scrub.

Photo 6: Viewing east from the eastern portion of the Western parcel within rabbitbrush scrub.

Photo 7: Viewing north from the northwestern portion of the Eastern Parcel within rabbitbrush scrub.

Photo 8: Viewing south from the northwestern portion of the Eastern Parcel within rabbitbrush scrub.

Photo 9: Viewing north from the southern portion of the Eastern Parcel located within a fallow agricultural field dominated by ruderal vegetation.

Photo 10: Viewing east from the southern portion of the Eastern Parcel located within a fallow agricultural field dominated by ruderal vegetation.

Appendix B
Burrowing Owl Protocol Presence/Absence Surveys, June 2010

Burrowing Owl (*Athene cunicularia*) Protocol Presence/Absence Surveys for Alpine Solar Project, Los Angeles County, California

Prepared for

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June 24, 2010

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Introduction and Purpose:

At the request of CH2M Hill Inc., Phoenix Ecological Consulting (Phoenix) initiated protocol burrowing owl surveys at a project site known as the Alpine Solar Project (ASP). The project proponent proposes to install a nominal 92-megawatt (MW) alternating current (AC) solar photovoltaic (PV) generating facility located on approximately 580 acres of developable area of the approximately 800-acre project site. The project site includes two distinct areas, the Western Parcel (approximately 600 acres) and the Eastern Parcel (approximately 200 acres), which will be connected by a 34-kilovolt (kV) transmission line (Figure A). The power generated by the project will be delivered from the project site to the California Independent System Operator (CAISO) grid by constructing a new, 1-mile long, and 66- kV generation tie-line to the Neenach Substation, which is owned and operated by Southern California Edison (SCE). Due to the potential impacts associated with the solar project, phase II owl surveys were conducted to determine if owls are present and to assess alternatives available to mitigate the impacts.

Burrowing owl (BUOW; *Athene cunicularia*) phase II-III protocol surveys were conducted during the months of April-June, 2010. A 150 meter buffer area survey was also conducted. The burrowing owl survey results were positive within the project site. Three burrowing owl territories were detected; five adult owls, two pairs and one unmated male were documented. The three territories are clustered in the southeastern portion of the western parcel, at West Avenue C and 210th Street West (Figure B).

Project Location:

The project site is located one mile north of Highway 138 (West Avenue D) near the Neenach substation in unincorporated portion of Los Angeles County within the Antelope Valley. The Kern County border lies 1.3 miles to the north. The elevation is 2,750 feet. The project boundary is situated between 220th Street West, on the western edge, and 200th Street West on, on the eastern edge. The northern boundary is south of West Avenue B and the southern boundary is aligned with West Avenue C. The project includes two proposed

photovoltaic solar fields of approximately 580 acres within Section 7 & 8, Township 8 North, Range 15 West, within United State Geological Survey (USGS) 7.5 Series Neenach School & Fairmont Butte Topographic Quadrangles. In addition, there is approximately one linear mile long and 100 feet wide transmission corridor along 210th Street West from Avenue C to Avenue D.

Habitat and Land Use:

The proposed project area is within disturbed, fallow agriculture fields. There is evidence of recent disking within portions of the site where the soils are exposed. There is also evidence of sheep grazing. There were approximately 100 sheep on the project site on May 14th, during the phase III owl survey. Some of the existing burrows on the western portion of the site received damage from sheep grazing. The remainder of the site consists of disturbed soils and low-lying, non-native vegetation such as non-native mustard, wild sunflower and Russian thistle (*Salsola sp*.) which has colonized the majority of the site. According to eSolar representative, Michael Bass, a portion of the site was farmed for carrots as recently as August 2008, which coincides with available aerial photos. Low-lying rabbitbrush (*Chrysothamnus sp*.) scrub commonly occurs within portions of the site and along the borders. There are also two vacant homesteads within the project site. The first is located in the southwestern corner of the western parcel and consists of dozens of ornamental, non-native trees, a water tank, a concrete pad and small piles of rubbish from the previous tenants. The second is located in the northern portion of the eastern parcel. It consists of ornamental trees, a double-wide mobile home, fence posts and a barn. There is also a row of 15-20 foot tall pine trees in the eastern parcel, along the western edge and south of the vacant home. Presumably, the trees were planted as wind breaks.

The topography is relatively flat with a mild north-east sloping grade of less than 10%. The gradient empties into a large unnamed drainage along the northern project limits. There are also several large soil mounds along the southern edge of the western parcel. The drainage along the northern edge of the western parcel ranges from 15 feet high and 20 feet wide, along

the western boundary, and widens out to 10 feet high and 25 feet wide, along the eastern edge of the property. The drainage flows in an easterly direction. During the survey visits, the drainage was full of dried Russian thistle that has blown into the drainage during high wind events. The soils consists a sandy-loam in the drainage and hard-packed silty-clay loam throughout the remainder of the site.

Burrowing Owl Species Description

Burrowing owls (*Athene cunicularia*) are small, long-legged, ground-dwelling owls that occur from British Columbia, throughout North America and portions of Central and South America. They winter in the southern latitudes and many remain as year-long residents in Southern California. At higher elevations and latitudes, they will only occur during breeding seasons. In California, high density owl populations have been documented in agriculture areas in the San Joaquin Valley and Imperial Valleys.

Burrowing owls occur in a variety habitat types throughout California; such as, annual and perennial grasslands, agriculture fields, deserts and scrublands characterized by low-growing vegetation (CBOC, 1993). Suitable owl habitat may also include areas with trees and shrubs where canopy cover is less than 30% of ground surface. Suitable burrows may include both artificial and natural burrows that provide shelter from the elements as well as protection from predators. Burrowing owls also use burrows for nesting during spring and early summer months. The California ground squirrel (CGS; *Spermophilus beecheyi)* is known to provide suitable burrows as well as inactive coyote, kit fox, badger and desert tortoise burrows. Burrowing owls can also create and/or modify existing burrows. Artificial burrows may include culverts, concrete pipes, irrigation boxes, wood debris piles and openings beneath cement or asphalt.

They are most active at night but are also known to be crepuscular (active dawn and dusk). Typical prey items include invertebrates, small mammals, lizards, snakes and small birds. They nest underground in burrows and clutches range between 4-9 eggs. Burrow entrances and nests area may be adorned with cow chips, feathers, grass, trash, food items and dog feces.

They are typically monogamous and tend to exist in colonies. They exhibit high nest fidelity and will return to the same burrow nest site for multiple years.

In desert scrub habitat, they are usually associated with canid and CGS burrows along mounds that provide vistas for viewing prey and predators. They are also found along washes and wash banks where small mammal and invertebrate abundance is higher. Burrowing owls are a BLM sensitive species and a California species of special concern. They are also protected under the Migratory Bird Treaty Act (MBTA) and within sections 3503, 3503.5 and 3800 of the California Department of Fish and Game Code which prohibits the take, possession, or destruction of birds, their nests or eggs (CBOC, 1993).

CNDDB Rarefind Database Search Results

A thorough literature review was conducted prior to the field work to determine the likelihood of burrowing owl encounters within the project footprint. The main database used in compiling known burrowing owl occurrences was the California Natural Diversity Database (CNDDB). There are multiple owl occurrences in the area; (1) Occurrence #351, 4 miles to the southwest, in 1999, describes a burrow with fledged young at 250th Street west and Avenue C, near the Los Angeles Aqueduct, (2) Occurrence #352, 4.6 miles to the southwest, in 1999, describes an occupied owl burrow north of Avenue D, near 256th Street (3) Occurrence #985, 3.9 miles to the northeast, in 2007, describes one owl observed near 180th Street West and Avenue A (Figure C; CNDDB, 2010). In summary, the project site lies within the range of the burrowing owl. There are known occurrences within 3-4 miles of the project which warrants the presence/absence surveys that were conducted this year.

Justification, Methodology and Qualifications:

Due to the fact that the proposed project site is located within the range of the burrowing owl, suitable vegetation habitat types occur on site and recent owl detections have occurred in the project vicinity protocol surveys were implemented during the 2010 survey period. The surveys began on April 18th and ended on June 21th. Survey methodology incorporated the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC, 1993). Field

surveyors included: Ryan Young, David Focardi, Jenny Weidensee, Josh Utter, Brooks Hart, Rebecca Koller and Brett Blosser.

The phase II survey methods consisted of walking thirty meter wide belt transects surveys, using hand-held Garmin GPS units with a 3-5 meter accuracy, within the project footprint and the 150 meter buffer, in a north to south direction, starting approximately a half hour after sunrise and ending no later than a half hour before sunset. Survey teams used hand-held mirrors to view into any potential burrows. During the survey, the surveyors search images included: burrows, burrowing owls, owl feathers, pellets, owl whitewash (scat), owl vocalizations and other avian species. Surveyors average coverage rate was 1.5 miles per hour, with an average daily coverage rate of 70 acres per day, per person. The surveyors conducted 150 meter buffer surveys around the perimeter of the site. The phase III surveys involved re-visiting known burrow locations to determine if owls were present. In addition, known owl locations were assessed to determine breeding status, territory size, number of owls present and general behavior. Vehicular surveys were also conducted during the phase III surveys by driving along existing dirt roads, within the project site, and stopping every 200 meters to scan the vegetation for owls and playing burrowing owl vocalizations to elicit a response.

Weather conditions during the survey effort consisted of an unusually cool, windy, wet conditions. Morning and afternoon temperatures were taken each day to ensure surveys were conducted within suitable survey parameters for burrowing owls.

Field Survey Results:

The burrowing owl surveys were positive for burrowing owls. A total of five adult owls were detected on site; three territories consisting of two pairs and one unmated male. Additionally, four juvenile owls were detected during the final phase III surveys in territory #1. Additional juveniles are likely present in territory #2 but were not seen. This conclusion is based on the female owl's behavior which suggested nestlings are present. Territory #3 consisted of one unmated, male owl that was sighted on several occasions at a burrow with abundant whitewash. The owl territories are concentrated in the southeastern portion of the western parcel (Figure B). The territories depicted in figure B are an approximate estimate

based on diurnal observations. It is assumed the territories are larger than depicted, as foraging distances, at night, can extend up to 2.7 km (Shuford, W.D. et. al. 2008). The burrowing owl and burrow detections on figure B and table 1 illustrate common perch or hunting sites that the owl(s) in that territory were using during each site visit. There are nine burrows detected that had either owl whitewash or pellets present (Table 1, Figure A). Seven of the nine burrows appeared to be active. The seven active burrows are concentrated in the southeastern portion of the western parcel. Domestic sheep were sighted on the project site during the phase III surveys on May 14th. Evidence of trampling was noticeable on burrow #2.

All detections along with incidental biological detections are listed on table 1 and plotted on figure A & B. The detections are cross referenced by their occurrence numbers on table 1. All GPS locations are in UTM NAD 83 datum.

Table 1: Detections for the Alpine Solar Project

Number	Easting	Northing	Sign	Date	Phase	Photo Point	Description
2	361659	3850977	Burrow	4/18/2010	II	N/A	Burrow with whitewash. 210mmX180mmXunknown depth. Evidence of sheep damage. Inactive burrow.
5	362291	3851016	Burrow	4/18/2010	II	N/A	Burrow with whitewash. 240mmx200mmx depth unknown. Profuse & recent whitewash.
6	361151	3851272	Burrow	4/18/2010	II	N/A	Inactive burrow with small amount of whitewash. Vegetation filled in collapsing entrance. Soil undisturbed.
7	362203	3851122	Burrow	4/18/2010	II	3	Active burrow with abundant whitewash. Unmated male seen at this site on three occasions. Territory #3.
8	362252	3850919	Burrow	4/18/2010	II	N/A	Burrow with whitewash and pellets. Abundant whitewash. Two pellets. 220mmx180mmxunknown depth.
16	362290	3851016	Burrow	5/14/2010	III.1	N/A	Burrow with fresh pellets and some whitewash. Female flushed. .
18	362252	3850830	Burrow	6/18/2010	III.3	N/A	Active owl burrow. Whitewash and pellets present.
19	362193	3851153	Burrow	5/23/2010	III.3	3	Burrow with abundant whitewash with unmated owl. CGS in vicinity. Territory #3.
21	362246	3850885	Burrow	6/19/2010	III.4	1	Burrow with juvenile owls. Territory #1
0	362360	3851154	Burrowing Owl	06/21/2010	III.4	N/A	Territory #3. Male perched ~160 meters east of burrow.
1	362400	3850805	Burrowing Owl	4/18/2010	II	N/A	Owl flushed. No burrow sighted.
9	362258	3850832	Burrowing Owl	4/19/2010	II	N/A	Owl flushed near burrow. Burrow with whitewash, pellets and feathers. All abundant. No photos due to possible nest site.
13	362193	3851153	Burrowing Owl	5/23/2010	III.3	3	Male burrowing owl at CGS burrow. CGS nearby. Observed for 1 hour. No mate sighted. Responded to tapes on 06/18/2010. Unmated. Territory #3.
14	362257	3850832	Burrowing Owl	5/14/2010	III.1	N/A	Male and female owl sighted at known location. Owl feathers and whitewash abundant at burrow.

17	362252	3850797	Burrowing Owl	5/24/2010	III.3	2	Male owl perched next to burrow. Female came out for 2 minutes and went back in. Territory #2.
22	362274	3850996	Burrowing Owl	6/20/2010	III.4	N/A	Male owl. Hunting/perching. Territory #2.
23	362248	3850909	Burrowing Owl	6/18/2010	III.4	N/A	Male and female sighted near burrow. Male was making short flights. Territory #2.
20	362246	3850885	Juvenile Owls	6/19/2010	III.4	1	Three juvenile owls sighted. Male eventually arrived. Emitted alarm calls. Territory #1
24	362067	3850989	Burrowing owl	06/21/20410	III.4	N/A	Adult male hunting west of burrows in fallow agriculture field. Territory #1.
25	362088	3850941	Burrowing owl	06/21/2010	III.4	N/A	Adult male hunting west of burrows in fallow agriculture field. Territory #1.
Incidental Detections							
14	362200	3852031	Golden eagle	5/23/2010	III.3	N/A	One golden eagle that flushed from northeastern edge of western parcel along large drainage. Flew northeast and landed 300 meters away.
11	362099	3852047	Northern Harrier	4/19/2010	II	N/A	Harrier flew from drainage on northern boundary of western parcel.
3	362110	3850641	Loggerhead Shrike	4/18/2010	II	N/A	One loggerhead shrike perched on a Joshua Tree.
10	363825	3851476	Loggerhead Shrike	4/19/2010	II	N/A	One loggerhead shrike sitting on power line.
26	362708	3851084	Golden eagle	06/21/2010	III.4	N/A	One golden eagle flying/hunting along eastern edge of western parcel.

Discussion of Results:

Three burrowing owl territories were detected on the project site through the phase II-III survey efforts. The owls are concentrated, in a colony, in the southeastern portion of the western parcel, near West Avenue C and 210th Street West. However, owls are not widespread in the surrounding, suitable habitat but there are CNDDB records within 3-4 miles. The uneven distribution and concentration of owls in one particular area is worth further examination. The habitat, within the colony, consists of 1-2 foot tall rabbitbrush (*Chrysothamnus* sp.) scrub with devil's lettuce (*Amsinkia tesselata*) as the dominant annual. It is also along the edge of a fallow agriculture field, to the west, and Joshua tree/Juniper woodland, to the south. Several large dirt mounds along the southern edge and scattered Joshua trees provide perches for the owls.

There is also an abundance of California ground squirrels (CGS) detected in southeastern section of the western parcel. During the phase III intensive surveys, the surveyors paid particular attention of CGS densities. At the completion of the survey efforts, it was noticeable that the CGS density around West Avenue and 210th Street West was higher than the surrounding areas. It has been suggested that burrowing owl habitat is dependent on CGS for burrows (Grinnell, 1994) and numerous studies have illustrated the co-existence between the two species (Barclay, J.H. et. al, 2007). Based on these findings, there are several factors that may contribute to the owl colony location: (1) abundant CGS burrows for shelter and nesting (2) numerous perch sites (3) variety of habitat types and edges for foraging (4) low-lying vegetation growth to observe potential predators/prey (5) High CGS density which may also aid in detection of potential predators via alarm calls.

Mitigation Recommendations:

Due to the presence of burrowing owls, the following mitigation recommendations are provided for the project proponent to consider. They are listed in three main categories: (1) avoidance (2) onsite-mitigation for unavoidable impacts (3) off-site mitigation for unavoidable impacts. The two remaining categories describe passive relocation measures and additional mitigation considerations.

Avoidance Measures:

- The project proponent should evaluate whether a project design modification is feasible. If burrowing owl habitat avoidance is feasible, a minimum of 6.5 acres of foraging habitat, calculated at a 100 meter foraging radius, should be maintained per pair. Ideally, the foraging habitat would be maintained in a conservation easement.
- If avoidance is feasible, no disturbance should occur within 50 meters of occupied burrows during the non-breeding season (September 1 – January 31) or within 75 meters during the breeding season (February 1 – August 31).

On-Site Mitigation Measures for Unavoidable Impacts:

- If project design modification is not feasible, occupied burrows should not be disturbed during the nesting season (February 1 to August 31) unless a qualified biologist has determined the owls are not breeding or that all juvenile owls are foraging independently.
- Acquire on-site mitigation lands at no less than 6.5 acres per pair or single bird. The lands should be preserved in a conservation easement. Due to the presence of three territories on site, the minimum area needed would be 19.5 acres.
- When the destruction of occupied burrows is unavoidable, existing burrows within mitigation lands should be enhanced or enlarged or created (by installing artificial burrows) in a ratio of 1:1 in the on-site mitigation lands.

- Mitigation lands should be fenced to prevent unwanted canid predators. Fencing would also provide potential perch sites for owls; prevent trespassers and OHV use in the conservation area.
- The project sponsor should provide funding for long-term management and monitoring of protected lands.

Off-site Mitigation Measures for Unavoidable Impacts:

- If on-site mitigation is not feasible, off-site habitat compensation for loss of burrowing owl nesting and foraging habitat should be acquired through a local conservation/land management group and permanently protected at the following ratios:

    a) Replacement of occupied habitat with occupied habitat at 1.5 times 6.5 acres per pair or single bird;
    b) Replacement of occupied habitat with habitat contiguous with occupied habitat at 2 times 6.5 acres per pair or single bird; and/or
    c) Replacement of occupied habitat with suitable unoccupied habitat at 3 times 6.5 acres per pair or single bird.

Passive Owl Relocation Measures:

- Prior to eviction, the project proponent should retain a qualified burrowing owl biologist to band the owls to aid in re-sighting efforts, post-eviction. Owls should be banded with a unique alpha-numeric color band to aid in re-sighting and relocation efforts.
- If avoidance is not an option, passive owl relocation should occur, after August 31st, over a two week period to acclimate the owls to the new site. Passive relocation involves installing one-way doors on active burrows to allow owls to "self-evict". The doors are installed for two days. After two days, the burrows are excavated and any owls

remaining inside the burrows are allowed to escape. The site is monitored for one week to determine the status of the burrowing owls.

- A monitoring plan should be developed that evaluates the methodology of the relocation efforts, success criteria, re-sighting efforts and habitat enhancement and management of the mitigation lands.
- An annual report that evaluates the relocation efforts and monitoring efforts should be submitted to the California Department of Fish and Game for a period of three years from completion of construction.

Additional Mitigation Measures:

- Burrowing owl worker awareness education should be provided to all construction related personnel. All project related personnel should receive an information pamphlet on general burrowing owl biology, how to recognize and avoid burrowing owls and the required set-backs when working in the vicinity of burrowing owls.
- When owls are present, a biological construction monitor should be present to monitor any burrowing owl in the area to determine if the level of disturbance is having an adverse impact on the owls. Biological monitors should also accompany any pre-project personnel such as land surveyors or well drilling and construction personnel.
- Utilize existing roads, whenever possible, to minimize disturbance to potential burrowing owl habitat.
- Conduct a 30 day preconstruction survey for burrowing owls prior to any ground disturbance. If burrowing owls are detected on site, no disturbance should occur within 50 m (160 ft) of occupied burrows during the non-breeding season (September 1 – January 31) or within 75 meters (250 ft) during the breeding season (February 1 – August 31).
- Submit a California Natural Diversity Database (CNDDB) form for any active burrowing owl burrows encountered in order to provide the resource agency personnel & biological consultants with a better understanding of owl distribution in this area.

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Shuford, W.D., Gardali, T. 2008. California Bird Species of Special Concern: A Ranked assessment of species, subspecies and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California and California Department of Fish and Game, Sacramento.

This concludes the burrowing owl phase IV survey report for the Alpine Solar Project.

Certification: *I hereby certify that the statements furnished above and in the attached figures and tables present the data and information required for this biological report and that the facts, statements and information presented are true and correct to the best of my knowledge.*

Date: _June 24, 2010_____ Signature: _____

Ryan Young, Senior Biologist & Principal

Figure A: Aerial View of the ASP Site & Burrow/Incidental Detections

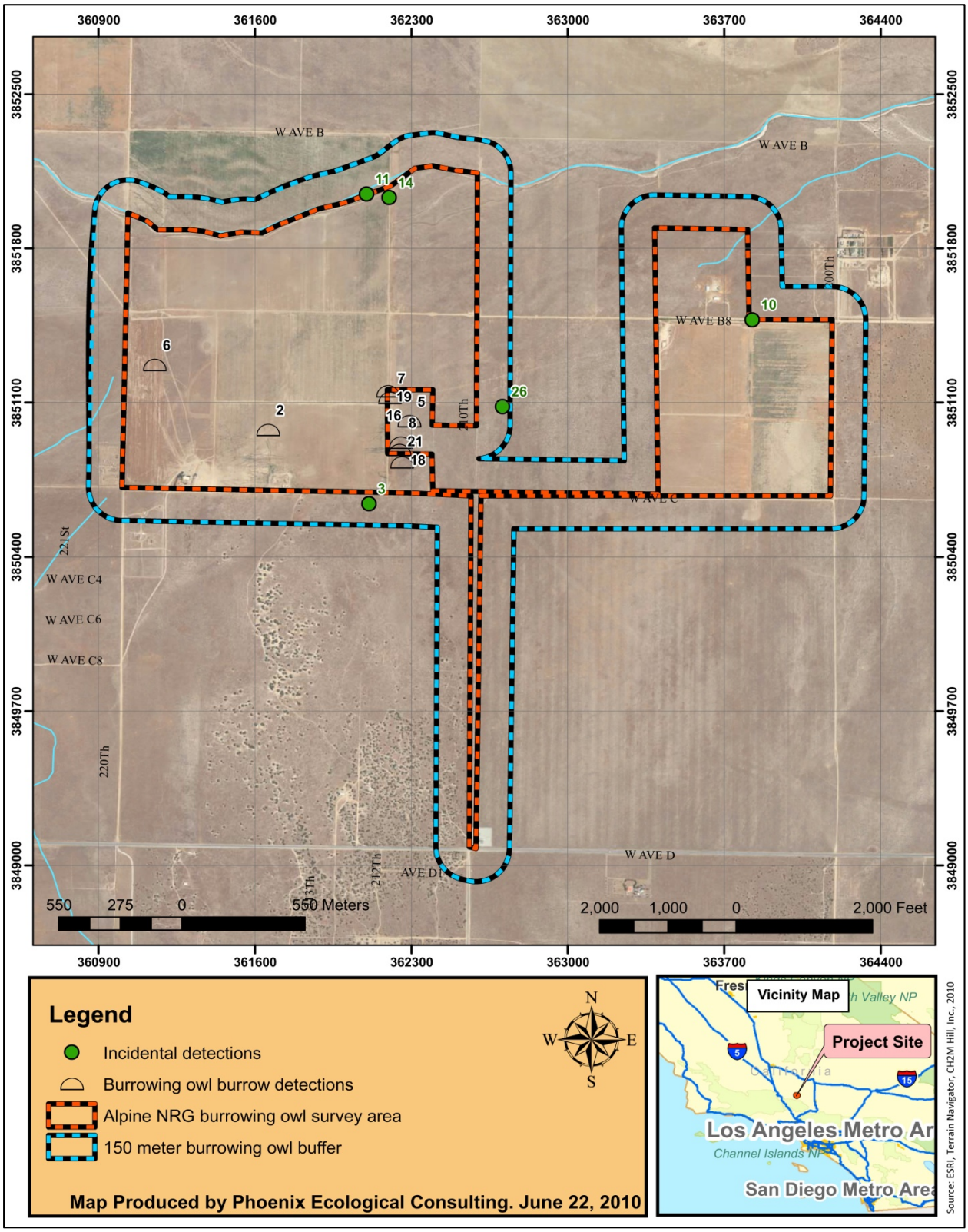

Figure B: Aerial View of Burrowing Owl Locations, Territories & Photo Points

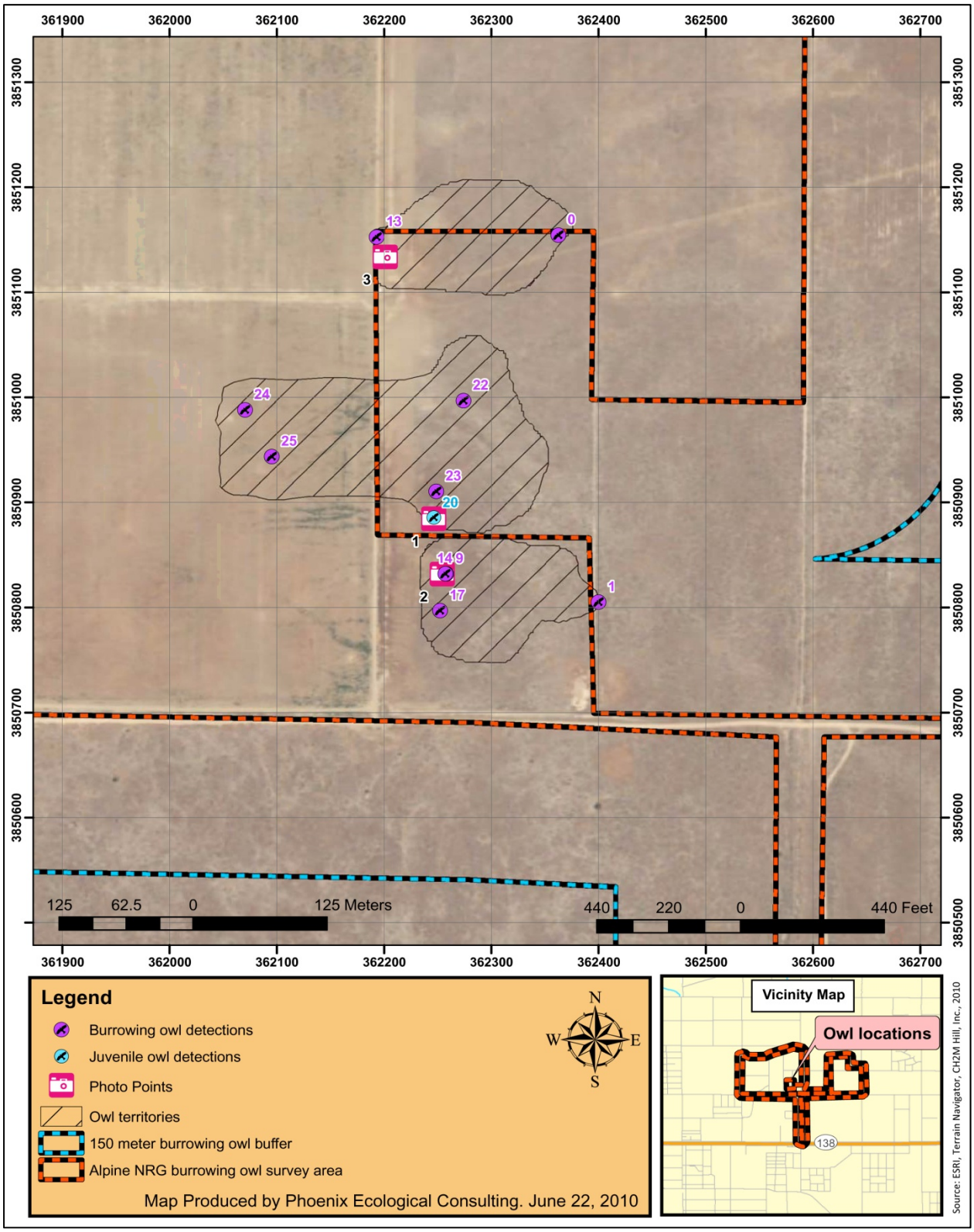

Figure C: CNDDB Burrowing Owl Occurrences for ASP

Figure D: Burrowing Owl Photos

Figure E: Proposed On-Site Mitigation Land Habitat Photos

Proposed On-Site Mitigation Lands (NE Portion-native rabbitbrush)

Proposed On-Site Mitigation Lands (NW Portion-Non-Native mustard)

Table 2: Vertebrates Detected During the ASP Surveys

Mammals
Antelope ground squirrel (*Ammospermophilus leucurus*)
Black tailed jack rabbit (*Lepus californicus*)
California ground squirrel (*Spermophilus beecheyi*)
Coyote (*Canis latrans*)
Desert woodrat (*Neotoma lepida*)
Domestic sheep (*Ovis aries*)-scat only
Kangaroo rat (*Dipodomys sp.*)-scat only
Birds
Ash-throated flycatcher (*Myiarchus nuttingi*)
Burrowing owl (*Athene cunicularia*)
California quail (*Callipepla gambelii*)
Common Raven (*Corvus corax*)
Golden eagle (*Aquila chrysaeotos*)
Horned lark (*Eremophila alpestris*)
House finch (*Carpodacus mexicanus*)
Ladder-backed woodpecker (*Picoides scalaris*)
Loggerhead shrike (*Lanus ludovicianus*)
Mourning dove (*Zenaida macroura*)
Northern harrier (*Cirrus cyaneus*)
Northern mockingbird (*Mimus polyglottos*)
Red-tailed hawk (*Buteo jamaicensis*)
Sage sparrow (*Amphispiza belli*)
Turkey vulture (*Cathartes aura*)
Western kingbird (*Tyrannus verticalis*)
Western meadowlark (*Sturnella neglecta*)
White crowned sparrow (*Zonotrichia leucophrys*)
White-throated swift (*Aeronautes saxatalis*)
Reptiles
Desert spiny lizard (*Sceloporus magister*)
Gopher snake (*Pituophis catenifer*)
Mojave rattlesnake (*Crotalus scutulatus*)
Side-blotched lizard (*Uta stansburiana*)
Western whiptail (*Cnemidophorus tigris*)

Table 3: Vascular Plants Detected During the ASP Surveys

FAMILY Species	Common Name	Habit
ASCLEPIADACEAE		
Asclepias vestita	Woolly milkweed	perennial
ASTERACEAE		
Ambrosia acanthicarpa	Annual bursage	annual
Ambrosia dumosa	White bur-sage	perennial shrub
Ambrosia salsola	Cheesebush	perennial shrub
Anisocoma acaulis	Scale bud	annual
Artemesia tridentata	Great-basin sagebrush	perennial shrub
Chrysothamnus nauseosus	Rubber rabbitbush	perennial shrub
BORAGINACEAE		
Amsinckia tessellata	Fiddleneck	annual
BRASSICACEAE		
Brassica toumeforti	African mustard	annual
Descurania pinnata	Tansy mustard	annual
Lepidium fremontii	Bush peppergrass	shrub
*Sisymbrium altissimum**	Tumble mustard	annual
CHENOPODIACEAE		
*Salsola tragus**	Russian thistle	annual
CUPRESSACEAE		
Juniperus californica	California juniper	shrub or tree
EPHEDRACEAE		
Ephedra nevadensis	Mormon tea	perennial shrub
EUPHORBIACAE		
Chamaesyce albomarginata	Rattlesnake weed	annual
GERANIACEAE		
*Erodium cicutarium**	Red-stemmed filaree	annual
LILIACEAE		
Yucca brevifolia	Joshua Tree	Tree
POACEAE		
Bromus madritensis ssp. *rubens**	Red brome	annual
*Bromus tectorum**	Cheat grass	annual
*Schismus arabicus**	Arabian grass	annual
SOLANAECEAE		
Datura wrightii	Datura	Annual or perennial

Appendix C
Burrowing Owl Relocation and Management Plan, April 2010

BURROWING OWL RELOCATION AND MANAGEMENT PLAN FOR THE PROPOSED ALPINE SOLAR PROJECT LOCATED EAST OF THE COMMUNITY OF NEENACH, LOS ANGELES COUNTY, CALIFORNIA

Prepared For: **NRG Solar Alpine LLC**

CH2M HILL Engineers, Inc

Prepared By: **Bloom Biological, Incorporated**
13611 Hewes Avenue
Santa Ana, California 92705

Date: April 27, 2011

Bloom Biological, Inc.
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EXHIBITS

1.0 INTRODUCTION

NRG Solar Alpine LLC (NRG, or "Applicant") proposes to construct, own, and operate a renewable energy project providing electricity generated from clean solar technology. The proposed Alpine Solar Project (ASP, or "project") would be located on approximately 800 acres in unincorporated Los Angeles County east of the community of Neenach. Based on field studies conducted by Phoenix Ecological Consulting in 2010, it has been determined that the project has the potential to adversely affect five resident Burrowing Owls (*Athene cunicularia*), a species protected by the California Department of Fish & Game as a Species of Special Concern and other protections provided by the Fish and Game Code. As such, Bloom Biological, Inc. (BBI) has prepared this management plan at the request of the Applicant to mitigate the proposed project's potential to adversely affect Burrowing Owls.

2.0 STUDY AREA DESCRIPTION

The Alpine Solar Project site is located in a rural area of the Antelope Valley in the northern portion of Los Angeles County. The nearest rural residential communities are Neenach, located approximately three miles from the western boundary of the project site, and Antelope Acres, located approximately ten miles from the eastern boundary of the project site. The project site is generally bounded by West Avenue B to the north, West Avenue C to the south, 220th Street West to the west, and 200th Street West to the east. The Western and Eastern Parcels are approximately 0.5 mile apart.

The project site is located on all or portions of Public Land Survey Sections 7 and 8 of Township 8 North, Range 15 West at the boundary of the U.S. Geological Survey's (USGS) 7.5-minute *Neenach School* and *Fairmont Butte* quadrangles (see Exhibits 1 and 2). Terrain on the site is relatively flat with a moderate gradient sloping northeast. A large unnamed drainage runs west to east near the northern edge of the project site.

Vegetation of the site was previously characterized by Phoenix Ecological Consulting (Phoenix 2010) as follows: "The proposed project area is within disturbed, fallow agriculture fields. There is evidence of recent disking within portions of the site where the soils are exposed. There is also evidence of sheep grazing. The remainder of the site consists of disturbed soils and low-lying, non-native vegetation such as non-native mustard, wild sunflower and Russian thistle (*Salsola* sp.) which has colonized the majority of the site. Low-lying rabbitbrush (*Chrysothamnus* sp.) scrub commonly occurs within portions of the site and along the borders. There are also two vacant homesteads within the project site. The first is located in the southwestern corner of the western parcel and consists of dozens of ornamental, non-native trees, a water tank, a concrete pad and small piles of rubbish from the previous tenants. The second is located in the northern portion of the eastern parcel. It consists of ornamental trees, a double-wide mobile home, fence posts and a barn. There is also a row of 15-20 foot tall pine trees in the eastern parcel, along the western edge and south of the vacant home. Presumably, the trees were planted as wind breaks."

In general, non-native vegetation, particularly mustard, seemed to have grown significantly between the April 2010 time period of the Phoenix study and visits by BBI in January 2010. This change represents a degradation in habitat quality for the Burrowing Owl as a result of reduced visibility and vulnerability of arthropod and small mammal prey.

3.0 PROPOSED PROJECT DESCRIPTION

The Alpine Solar Project would consist of a nominal 92-megawatt (MW) alternating current (AC) solar photovoltaic (PV) generating facility located on approximately 580 acres of developable area of the approximately 800-acre Project site. The Project site includes two distinct areas, defined for the purpose of

this document as the Western Parcel (approximately 600 acres) and the Eastern Parcel (approximately 200 acres). The power generated by the Project will be delivered from the Project site to the California Independent System Operator (CAISO) grid by constructing two new 66-kV generation tie-lines to the Neenach Substation, which is owned and operated by Southern California Edison (SCE). The 66-kV transmission lines for the Project will be located adjacent to West Avenue C and 210th Street West (currently unpaved roads) and will extend from the Project site to the Neenach Substation.

4.0 STATUS OF BURROWING OWL AT THE PROPOSED PROJECT SITE

Phoenix Ecological Consulting conducted protocol surveys on the project site for Burrowing Owl from April 18 to June 21, 2010 using standard accepted survey methods recommended in the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC, 1993). The biologists conducting the surveys were: Ryan Young, David Focardi, Jenny Weidensee, Josh Utter, Brooks Hart, Rebecca Koller and Brett Blosser. Phoenix (2010) described their methods as follows:

> *The phase II survey methods consisted of walking thirty meter wide belt transects surveys, using hand-held Garmin GPS units with a 3-5 meter accuracy, within the project footprint and the 150 meter buffer, in a north to south direction, starting approximately a half hour after sunrise and ending no later than a half hour before sunset. Survey teams used hand-held mirrors to view into any potential burrows. During the survey, the surveyors search images included: burrows, Burrowing Owls, owl feathers, pellets, owl whitewash (scat), owl vocalizations and other avian species. Surveyors average coverage rate was 1.5 miles per hour, with an average daily coverage rate of 70 acres per day, per person. The surveyors conducted 150 meter buffer surveys around the perimeter of the site. The phase III surveys involved re-visiting known burrow locations to determine if owls were present. In addition, known owl locations were assessed to determine breeding status, territory size, number of owls present and general behavior. Vehicular surveys were also conducted during the phase III surveys by driving along existing dirt roads, within the project site, and stopping every 200 meters to scan the vegetation for owls and playing Burrowing Owl vocalizations to elicit a response.*

The 2010 surveys conducted by Phoenix found Burrowing Owls present in the southeastern portion of the western parcel of the project (see Exhibit 2). Phoenix (20101) described their survey results as follows:

> *The Burrowing Owl surveys were positive for Burrowing Owls. A total of five adult owls were detected on site; three territories consisting of two pairs and one unmated male. Additionally, four juvenile owls were detected during the final phase III surveys in territory #1. Additional juveniles are likely present in territory #2 but were not seen. This conclusion is based on the female owl's behavior which suggested nestlings are present. Territory #3 consisted of one unmated, male owl that was sighted on several occasions at a burrow with abundant whitewash. There are nine burrows detected that had either owl whitewash or pellets present. Seven of the nine burrows appeared to be active. The seven active burrows are concentrated in the southeastern portion of the western parcel. Domestic sheep were sighted on the project site during the phase III surveys on May 14th. Evidence of trampling was noticeable on burrow #2.*

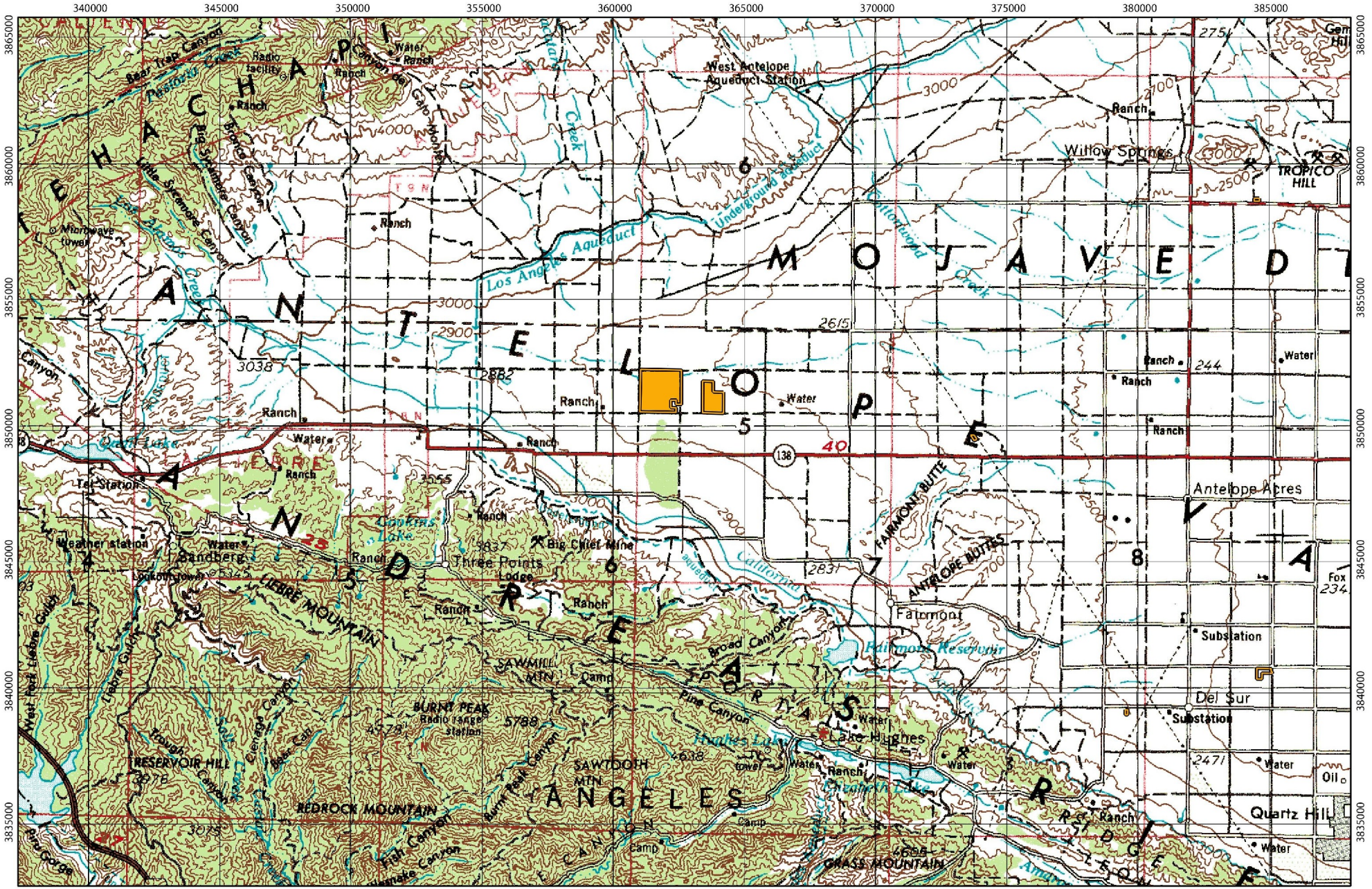

Exhibit 1: Location Map

Alpine Solar Project | Los Angeles County, California

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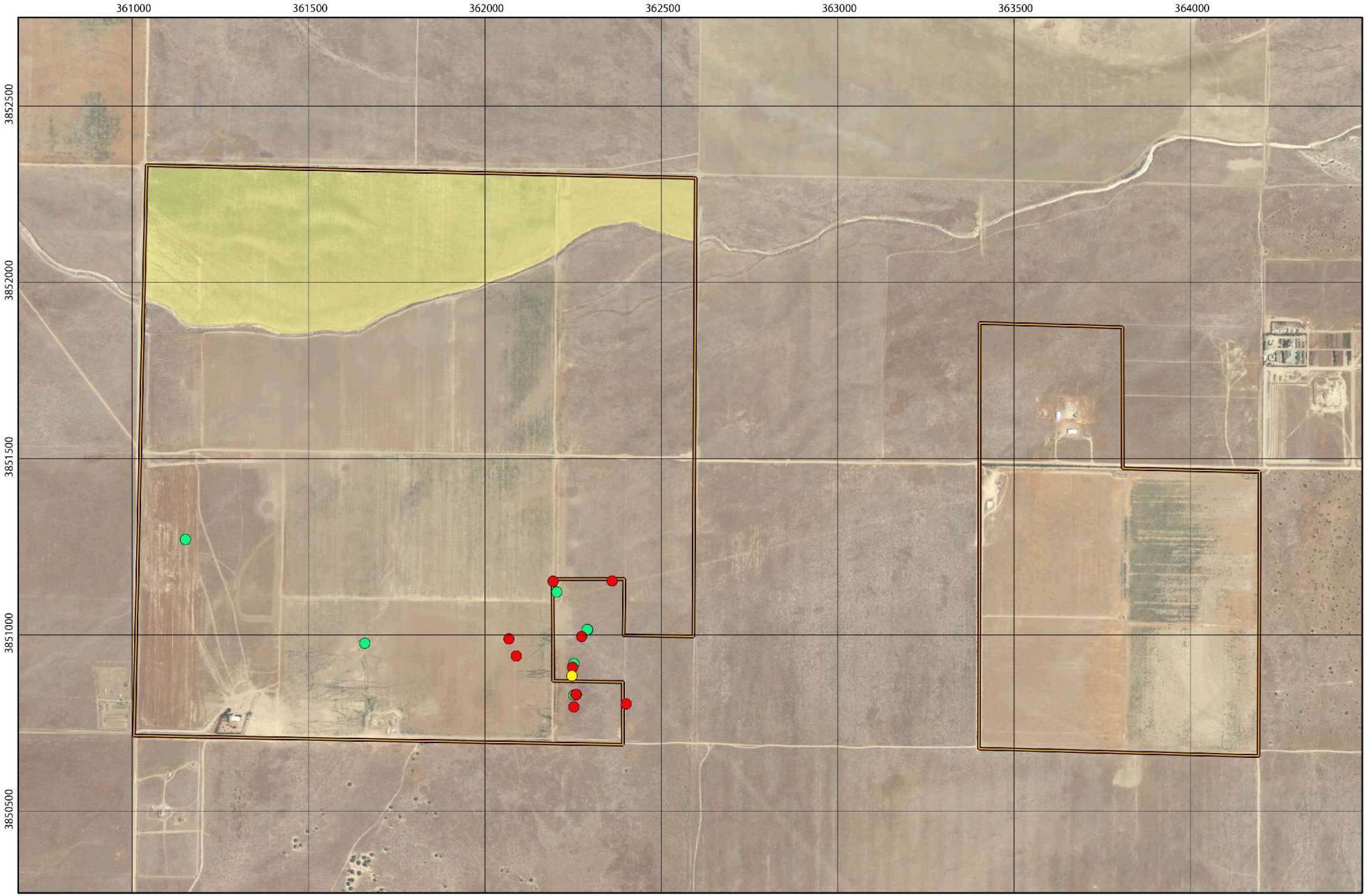

Project Limits

Land Use

Burrowing Owl Mitigation

2010 Burrowing Owl Survey Results (Phoenix Ecological Consulting)

- Burrow
- Burrowing Owl
- Juvenile Owls

Author: Marcus C. England. Date: 27 January 2011.

0 1000 2000 3000 ft

1:15000

Exhibit 2: Site Map

Alpine Solar Project | Los Angeles County, California

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5.0 NATURAL HISTORY OF THE BURROWING OWL

The Burrowing Owl is a small, long-legged and mostly terrestrial owl occurring primarily in open, dry grassland and desert habitats from British Columbia, south primarily through the western portions of the United States (with populations present in southern Florida) through Mexico, Central America and much of northern and central South America. In California, this species was formerly common in appropriate habitats throughout the state at elevations as high as 5,300 feet (1600 meters), however, this species has declined in numbers markedly throughout the state in recent decades (Garrett and Dunn 1981, Hamilton and Willick 1996, Unitt 2004, Kidd *et al.* 2007, Lincer and Bloom 2007, CDFG 2008). Most Burrowing Owl breeding populations in the state are year-round residents, with the winter population augmented by migrants from further north in their range (Call 1978). A state Species of Special Concern, this species is protected in the state of California from direct take (killing, injuring, or causing failure of an active nesting effort) by both the federal Migratory Bird Treaty Act and the California Fish and Game Code Section 3503.5 and 3800.

Many resources describe the natural history of the Burrowing Owl in great detail (for an example, see CDFG 2008 or, for this project, Phoenix 2010), and much of this information will not be repeated here. Pertinent to this relocation and management plan, however, are the previously described habitat preferences, as well as the subterranean refugia typically used by these owls. Burrowing owls utilize underground burrows for shelter and nesting. Soils suitable for burrows may limit distribution in natural areas; however, the species will also occupy man-made niches such as banks and ditches, piles of broken concrete, and even abandoned structures (Haug et al. 1993). It is also notable that many researchers and observers have noted a strong association between Burrowing Owls and burrowing mammals, especially ground squirrels (*Spermophilus* spp.). Phoenix (2010) noted in the Burrowing Owl survey report for this project that the owls were located in the only portion of the project site where California Ground Squirrels (*S. beecheyi*) were present. Of all the potential natural burrow builders and artificial structures, burrows created by the California Ground Squirrel are the ones most frequently occupied by Burrowing Owls (Bloom pers. obs.).

6.0 POTENTIAL ADVERSE PROJECT EFFECTS ON BURROWING OWLS

The proposed project would adversely affect Burrowing Owls by direct destruction of suitable burrows both occupied and unoccupied, and removal of foraging habitat utilized by the five on-site adult Burrowing Owls and their young. Further, in the absence of mitigation and monitoring measures proposed for this project, construction has the potential to kill or injure owls within the project area if they do not leave the burrow during grading. Foraging habitat could be improved or even increased if exotic mustard and tumbleweed plants can be controlled.

7.0 MITIGATING POTENTIAL ADVERSE PROJECT EFFECTS

To mitigate potential adverse project affects, Phoenix (2010) recommended a variety of mitigation measures separated into three main categories: (1) avoidance (2) onsite-mitigation for unavoidable impacts (3) off-site mitigation for unavoidable impacts. As avoidance has been determined to not be feasible for this project, we will restate here on-site and off-site mitigation alternatives originally described by Phoenix. The Applicant has agreed to on-site mitigation, therefore, this relocation and management plan is based on the Applicant's implementation of the on-site mitigation measures.

7.1 On-Site Mitigation Measures for Unavoidable Impacts

- Occupied owl burrows shall not be disturbed during the nesting season (February 1 to August 31) unless a qualified biologist has determined the owls are not breeding or that all juvenile owls are foraging independently.

- Designate on-site mitigation lands at no less than 6.5 acres per pair or single bird. The lands should be preserved in a conservation easement that would provide long-term preservation and vegetation management of these lands. Therefore, based on the presence of three territories on site, 19.5 acres is the minimum amount recommended by CDFG based on the burrowing owl mitigation consortium guidelines. Based on the project biologist's recommendations to provide adequate nesting and foraging habitat for five owls and their potential offspring, an additional 30.5 acres shall be managed as a buffer area through a conservation easement in accordance with the Plan, for a total of 50 acres to provide long-term preservation of these lands.

- When the destruction of occupied burrows is unavoidable, existing burrows within mitigation lands should be enhanced or enlarged or created (by installing artificial burrows) in a ratio of 4:1 in the on-site mitigation lands.

- The project sponsor should provide funding for long-term management and monitoring of protected lands.

7.2 Off-Site Mitigation Measures for Unavoidable Impacts

If on-site mitigation is not feasible, off-site habitat compensation for loss of Burrowing Owl nesting and foraging habitat should be acquired through a local conservation/land management group and permanently protected at the following ratios:

a) Replacement of occupied habitat with occupied habitat at 1.5 times 6.5 acres per pair or single bird;

b) Replacement of occupied habitat with habitat contiguous with occupied habitat at 2 times 6.5 acres per pair or single bird; and/or

c) Replacement of occupied habitat with suitable unoccupied habitat at 3 times 6.5 acres per pair or single bird.

8.0 DESCRIPTION OF PROPOSED MITIGATION AREA

The proposed Burrowing Owl Mitigation Area is located in the northern end of the western project parcel and includes all lands north of the unnamed drainage owned by the Applicant. The location of this area is depicted in Exhibit 2. This area has been chosen because it is not intended for solar development by the Applicant, could provide suitable habitat for Burrowing Owls with some modification and management (described below), and is located adjacent to land parcels compatible with Burrowing Owl use and potential additional long term conservation. Given the substantial quantity of foraging habitat to be removed for the solar project and the fact that the young of these adults will also require foraging habitat, BBI recommends that, if utilization of the entirety of this area for mitigation is not feasible, that based on the presence of three territories on site, 19.5 acres be preserved through a conservation easement, or other appropriate mechanism to provide long-term preservation of these lands. In addition, BBI recommends an additional

30.5 acres be covered by a deed restriction or other mechanism and the vegetation managed for owl foraging habitat.

9.0 MITIGATION AREA PREPARATION

While the mitigation area has the potential to support Burrowing Owls, it is likely that Burrowing Owls are not currently present in the mitigation area because some site improvement is warranted. The following activities should be completed prior to project implementation and relocation of extant owls on the project site in order to increase the possibility of success.

9.1 HABITAT IMPROVEMENT

Grinnell and Miller (1944) described Burrowing Owl habitat in California as "open, dry, nearly or quite level, grassland; prairie; desert floor." The CBOC protocol (1993) notes that shrubland should be considered potential habitat if the shrub cover is below 30 percent (CBOC 1993). While much of the area surrounding the project site, as well as the portions of the project site currently occupied by owls, have some degree of shrub cover, shrub cover is minimal (perhaps because of grazing) in the mitigation area. As such, the habitat in the mitigation area is not typical of that found throughout the area. BBI recommends the following measures to improve habitat in the mitigation area:

- Planting of native shrubs, particularly creosote (*Larrea tridentata*), and rabbitbrush (*Chrysothamnus* sp.), to obtain a shrub cover greater than is currently present. Due to the known difficulties in re-establishing native shrubs such as creosote and rabbitbrush, a specific performance standard is not included; however, the goal is to provide shrub coverage of less than 30%, and preferably in the range of 10 – 20%.

- Removal of tumbleweeds (*Salsola* sp.), a non-native species, from the project area, including live plants and dead plants that have accumulated in the unnamed drainage.

- Maintenance of vegetation parameters conducive to Burrowing Owl presence. Average height of vegetation in the grassland component of the mitigation area should be less than 6-8 inches. This vegetation height could be achieved through the control of non-native mustard (*Brassica* sp.), mowing, monitored grazing (to prevent grazing of planted shrubs), as well as controlled burns.

9.2 ARTIFICIAL BURROW CONSTRUCTION

As previously described, there are currently few, if any, available burrows in the mitigation area for relocated Burrowing Owls to move in to. For this reason, artificial burrows will be constructed in the mitigation area at a recommended (CBOC 1993, CDFG 1995) 4:1 ratio (4 artificial burrows for every 1 occupied burrow removed by the project) at locations to be selected based on local site conditions, proximity to the northern edge of the project and other surrounding land uses, and vegetative parameters. The ultimate goal will be to relocate the owls as far from the work activity as feasible, but as close to the burrows being removed as possible (Arizona Game and Fish Department 2007).

9.2.1 Underground Burrows

As applicable, a backhoe or similar heavy equipment will be used to dig a trench for the burrow entrance and exit openings, access-way, and a nesting chamber. Based on methodologies outlined in the literature, each artificial burrow will consist of a nest box, composed of an upside down sprinkler valve box, placed so the bottom is 4 feet underground so that the average temperature in the burrow will be between 60 and 75

degrees Fahrenheit. The open bottom of the nest box will have hardware cloth stretched across it to prevent potential predators or ground squirrels and gophers from digging underneath it, as well as allow moisture to escape. Extending from the nest box will be an access tunnel made from black 4-inch flexible perforated irrigation hose (to prevent flooding of burrows due to rain events), and extending a minimum of 12 feet from the box. The first six feet of hose are laid at the same level as the box. The second six feet of hose are laid at 90 degrees from the first six feet and will slope gently upward to ground level. For protection from dogs and other predators, a rigid 6-inch PVC pipe will be used as a sleeve over the 4-inch flexible perforated irrigation hose. Each opening will also consist of an apron of dirt spread by hand to mimic the original burrow to the extent possible. White-painted stakes will be placed around the burrow openings to mark the burrow location and to attract Burrowing Owls.

9.2.2 Aboveground Burrows

An alternative design of an artificial burrow, a mound or aboveground burrow, may be utilized due to its attractiveness to Burrowing Owl (P. Bloom, personal communication) and when excavation is not permitted in an area. The artificial nest chamber and entrance tubes used are the same as for an underground burrow, except these items are arranged flat on the ground. Some soil is applied by hand to keep the nest chamber and tubes in place before a backhoe is used to build the mound. Soils should be piled to a five-foot depth on isolated mounds to approach the temperature stability of an underground burrow.

9.2.3 Perches

Appropriate perches may be erected surrounding the artificial burrow so that it could provide safe locations for the Burrowing Owl to utilize. Appropriate perches may reduce the distance an owl moves away from the burrow when disturbed and thus, reducing potential nest abandonment and predation risk. Perches would consist of wooden "T" stakes inserted into the ground or other materials that would be suitable for each specific occupied burrow and/or active nest.

9.2.4 Protection from Nest Predators

In order to shield the artificial burrows from larger mammalian nest predators such as Coyotes (*Canis latrans*) and feral dogs, artificial burrows should be armored with rocks, placed in such a way to protect the tunnels and nest chambers.

9.3 California Ground Squirrel Introduction

As noted previously, the presence of California Ground Squirrels can be an important indicator of the potential presence of Burrowing Owls in an area. In, Phoenix (2010) noted the following regarding Burrowing Owls and California Ground Squirrels on the project site:

> *The owls are concentrated, in a colony, in the southeastern portion of the western parcel, near West Avenue C and 210th Street West. However, owls are not widespread in the surrounding, suitable habitat but there are CNDDB records within 3-4 miles. The uneven distribution and concentration of owls in one particular area is worth further examination. The habitat, within the colony, consists of 1-2 foot tall rabbitbrush scrub with devil's lettuce (*Amsinkia tesselata*) as the dominant annual. It is also along the edge of a fallow agriculture field, to the west, and Joshua tree/Juniper woodland, to the south. Several large dirt mounds along the southern edge and scattered Joshua trees provide perches for the owls.*

There is also an abundance of California ground squirrels (CGS) detected in southeastern section of the western parcel. During the phase III intensive surveys, the surveyors paid particular attention of CGS densities. At the completion of the survey efforts, it was noticeable that the CGS density around West Avenue and 210th Street West was higher than the surrounding areas. It has been suggested that Burrowing Owl habitat is dependent on CGS for burrows (Grinnell, 1994) and numerous studies have illustrated the co-existence between the two species (Barclay, J.H. et. al, 2007). Based on these findings, there are several factors that may contribute to the owl colony location: (1) abundant CGS burrows for shelter and nesting (2) numerous perch sites (3) variety of habitat types and edges for foraging (4) low-lying vegetation growth to observe potential predators/prey (5) High CGS density which may also aid in detection of potential predators via alarm calls.

BBI recommends relocation and/or introduction of California Ground Squirrels into the mitigation area as an optional measure that will greatly increase the odds of success for permanent Burrowing Owl establishment in the mitigation area. As it is not common practice to relocate and/or introduce ground squirrels, it is not know if this will be successful; therefore no performance criteria is established for this relocation/introduction as it is not critical to the relocation of the owls.

10.0 RELOCATION PROCESS

The following sections generally describe the recommended process for relocating Burrowing Owls from the impact area to the mitigation area (Arizona Game and Fish Department 2007).

10.1 RELOCATION OPTIONS

There are two available options for Burrowing Owl relocation: active and passive. Both are described below.

10.1.1 Active Relocation

Active relocation involves the trapping, marking, relocation, and release of owls to preserved lands specifically managed for Burrowing Owls (Arizona Game and Fish Department 2007). Active relocation is thought to have higher success rates than passive relocation because owls are physically introduced to a desired preserve that supports ample burrows, refuge sites, perches and is, most importantly, managed for Burrowing Owls. Because all owls in an active relocation procedure are marked with unique leg bands, the success of this technique can be measured by tracking each owl at the release site. Unfortunately, Burrowing Owls subject to passive relocation are not marked and hence the outcome of these projects is always unknown. Some owls banded in active relocation procedures have disappeared almost immediately while others have been found to stay on-site and fledge young up to as many as four years post release. In several cases their young also produce young at the relocation site which is the true test of success (Bloom *et al*. 2003).

10.1.1.1Background

Since the early 1990's BBI has been working with the Department of Defense (Naval Weapons Station, Seal Beach [NWSSB]) on a Burrowing Owl Management Plan whereby they are attempting to restore the nesting population to levels observed in the early 1970's. Since 1993 BBI has been constantly monitoring the wild nesting population at NWSSB and have augmented the population with owls opportunistically acquired from rehab centers and development sites. During these 15 years BBI has utilized a variety of release methods and refined the methods into a fairly standardized procedure. These efforts at NWSSB have been successful at relocating owls away from California Least Tern (*Sternula antillarum browni*) colonies in coastal counties and development sites in inland Riverside, San Diego, and San Bernardino Counties. In some cases, we matched

birds from Riverside County (Diamond Valley Lake) and coastal San Diego (tern colonies) with successful results where they bred on-site, fledged young and their young dispersed within the preserve area and successfully fledged young.

BBI has also recently used this relocation technique at the San Jacinto Wildlife Area during 2004-2006 whereby BBI was able to establish a small nesting colony of four pairs. From these efforts we found adults and young nesting at the release site in subsequent nesting seasons following their release. Unfortunately, three of eight adults were "accidentally" shot during the upland game-bird hunting season and the site has not been used for relocations since then. In this case, the release site was simply placed in a less than desirable location where we did not anticipate owl mortality from hunters because of the proximity to the refuge office.

10.1.1.2Methods

The following generally describes the methods that would be used to actively relocate owls from the project impact area to the mitigation area:

- Authorization to Trap and Relocate – BBI will use a permitted biologist to conduct the work with valid permits provided by the CDFG and the US Fish and Wildlife Service. BBI will obtain permission to relocate owls from the aforementioned resource agencies.

- Install an artificial burrow and release enclosure for each pair of relocated owls on the preserve.

- Owl(s) will be captured with a combination of noose carpets, mist nets, or bow-nets (Bloom 1987, Bloom *et al.* 2007). Once the owls are captured, they will be driven to the release site and deposited in their respective enclosures while BBI initiates the inspection and excavation of all plausible on-site burrows that might support owls or allow for future occupation before project construction. Burrows will be excavated after determined vacant by use of a down-hole camera and monitoring.

- Maintain owls for approximately 4-6 weeks in enclosures – permitted biologists will provide daily supplemental feedings of dead house mice (*Mus musculus*) at a rate of two mice/owl/day during the hold period.

- Evaluate and address problems from trespassers and possible predators (Coyotes, feral dogs, hawks, falcons, & owls) at the release site. Any issues will be consulted with the Applicant on an as needed basis. Any actions taken will be included in the annual and interim report.

- Trap, band, and color band all owls in order to monitor their behavior and survivorship post release. This would include juveniles produced by relocated owls.

- Install three artificial burrows per released owl, each at varying distances outside the release enclosure to provide refuge sites for fledgling owls. This will help reduce mortality as they venture from the enclosure. These burrows would also provide additional nest sites for recruitment of dispersing young and adults and winter migrants.

10.1.2 Passive Relocation

Passive relocation (Trulio 1995) is the most common method of removing Burrowing Owls from sites prior to clearing/grubbing activities. One method of passive relocation involves the installation of one-way doors

at the burrow entrance(s) outside of the nesting season (Arizona Game and Fish Department 2007). Clark and Plumpton (2005) present modified dryer vents as one-way doors. Alternatively, no one-way doors would be required if occupied burrows are actively monitored over a 24-hour period to monitor document owl activities. When biologists have directly observed that all owls are away from their burrows, the burrows would be excavated and collapsed using approved methods. Burrows will be collapsed using a hand shovel or backhoe. Burrows will be collapsed systematically to allow for visual inspection of each chamber prior to proceeding to the next chamber. If a scoping device is used, excavation of burrow chambers will be alternated with use of the scope to confirm that deeper chambers are unoccupied. Each burrow will be refilled with dirt and/or rocks to prevent reoccupation by Burrowing Owls. Passive relocation of owls and collapsing of burrows where passive relocation has taken place will follow the accepted protocol as described by the CBOC (1993).

10.1.2.1Background

Passively relocating Burrowing Owls from a site can be a viable option for management or mitigation purposes when applied correctly. Per accepted CDFG (1995) protocol guidelines for passive relocation, the method should only be applied when at least 6.5 acres of suitable land directly adjacent to the active burrows are permanently preserved and managed appropriately (e.g. grazed or mowed), the lands provide abundant burrows, squirrels, suitable prey, and lack of perches for avian predators unless otherwise approved by CDFG. While the CDFG continues to endorse this method as the primary form of Burrowing Owl mitigation, it has not provided long-term conservation value for the Burrowing Owl except for a very limited number of projects (e.g. San Jose Airport – Albion Environmental, Inc.), where the technique was applied correctly by an owl expert. Passive relocation has also been found to be especially applicable to linear projects (utility corridors) where only temporary impacts are encountered and the owls are provided an adequate number of natural or artificial burrows outside the linear easement during the course of construction (Bloom and Kidd unpublished data).

CDFG recently funded a study titled the "Burrowing Owl Mitigation Effectiveness Project" whereby some short term information was gathered on the results of passive relocation. During 2002 and 2003 a total of 36 Burrowing Owls were captured from four different construction sites in Sacramento County and fitted with radio transmitters (CDFG web-site 2008). The owls were tracked and monitored from the time of capture, through construction, passive relocation, and dispersal. This study concluded 5 of 16 owls died from predation and construction activities. They also concluded some owls stayed a relatively short distance from the natal burrows when suitable habitats were located adjacent to the construction. Observations were however limited in duration and did not report on occupancy during subsequent breeding season(s) when true success could have been determined. Other projects with similar short term monitoring report similar results (Trulio 1995, 1997). Most importantly, CDFG was unable to re-sight any of the study owls which were evicted from sites where suitable habitats were eliminated and adjacent lands lacked suitable habitat(s).

These results add to the information many owl experts have been suggesting for years that the process of evicting owls from their nest burrows increases immediate risk of predation, lowers rates of survivorship and ultimately does not provide adequate mitigation or long-term conservation value.

10.1.2.2Methods

If passive relocation is chosen as the relocation method for this project, relocation will be conducted after artificial burrows are installed. Occupied burrows shall not be disturbed during the nesting season (1 February through 31 August) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Passive relocation outside of

the nesting season may be permitted pending evaluation of detailed, site-specific passive relocation plans and receipt of formal written approval from the CDFG authorizing the passive relocation.

10.1.2.2.1 Burrow Removal

All suitable Burrowing Owl burrows located within the grading footprint would be collapsed to ensure Burrowing Owls do not relocate to an alternate burrow within the footprint. The proposed project's impact area will be monitored during the 24 hour period prior to collapse or covering of the burrows. All burrows within the impact area will be visually inspected for sign of recent Burrowing Owl occupation. All burrows will be monitored at dawn (1 hour before sunrise to 2 hours after sunrise) and at dusk (2 hours before sunset to 1 hour after sunset), the period of highest activity for Burrowing Owl, to determine occupancy of the burrows.

Burrows within the grading footprint believed to be unoccupied based on results of the preconstruction surveys and the monitoring effort will be collapsed first. Burrows will be collapsed using a hand shovel or backhoe. Burrows will be collapsed systematically to allow for visual inspection of each chamber prior to proceeding to the next chamber. If a scoping device is used, excavation of burrow chambers will be alternated with use of the scope to confirm that deeper chambers are unoccupied. Each burrow will be refilled with dirt and/or rocks to prevent reoccupation by Burrowing Owls.

10.1.2.2.2 Banding Burrowing Owls

Should an owl be encountered in a burrow during burrow excavation, a qualified biologist will capture and band the owl. Banding of the owl will be conducted at the burrow and the owl will be immediately released at the burrow where it was captured once banding is complete. Biologist(s) conducting banding will have the required permits to conduct this activity.

10.1.2.2.3 Monitoring

Monitoring will be conducted daily for the first week and weekly thereafter after relocation up until the onset of ground disturbance due to construction to ensure that owls do not re-establish themselves within the project impact footprint. During each monitoring event, biologists will examine the collapsed burrows and survey for owl-related impacts and new burrows within the project impact footprint.

Banded Burrowing Owls that are passively relocated will be monitored by biological monitors during the construction phase until construction is completed. The replacement burrows will be monitored until the next breeding season to determine if they are being utilized by owls. From construction or enhancement of the replacement burrows until January 31st (the end of the winter season), the burrows will be monitored monthly. The monitoring will consist of visual inspection of the burrow for owl sign as well observation of the burrow during one morning period (1 hour before sunrise to 2 hours after sunrise) and one evening period (2 hours before sunset to 1 hour after sunset). Additionally, motion-triggered camera may be placed near the burrows to determine and track usage between monthly monitoring visits.

10.1.2.2.4 Reporting

A report will be submitted to the Applicant and CDFG within 30 days of relocation activities documenting the total number of burrows collapsed, number of owls observed vacating the site, and data on owls banded. Additionally, the report will document the number of replacement burrows installed or existing burrows enhanced, provide a map depicting the location(s) of the replacement burrows, and the results of monitoring activities.

A report will also be submitted to the Applicant and CDFG within 30 days after completion of monitoring surveys of the replacement burrows. The report will include, but not be limited to, the following: project name, locations, and all pertinent information pertaining to the project site; information on Burrowing Owl individuals and their band numbers and colors; monitoring results (re-sights of color-banded Burrowing Owls, use of replacement burrows); and any other pertinent data gathered through the passive relocation process and subsequent monitoring efforts.

11.0 ADDITIONAL MEASURES DURING PROJECT CONSTRUCTION

Consistent with mitigation measures recommended by Phoenix (2010), the Applicant will ensure the following:

- Burrowing owl worker awareness education will be provided to all construction related personnel. All project related personnel will receive an information pamphlet on general Burrowing Owl biology, how to recognize and avoid Burrowing Owls and the required set-backs when working in the vicinity of Burrowing Owls.

- When owls are present, a biological construction monitor will be present to monitor any Burrowing Owls in the area to determine if the level of disturbance is having an adverse impact on the owls. Biological monitors should also accompany any pre-project personnel such as land surveyors or construction personnel.

- Submit a California Natural Diversity Database (CNDDB) form for any active Burrowing Owl burrows encountered in order to provide the resource agency personnel & biological consultants with a better understanding of owl distribution in this area.

12.0 LONG TERM MANAGEMENT

The following measures will be undertaken by the Applicant in the longer term to ensure and document the success of the Burrowing Owl relocation program.

12.1 FUNDING

Funding for all activities proposed by this plan will be provided by the Applicant through the establishment of a permanent non-wasting endowment fund sufficient to cover all expenses. The timing of establishment, dollar amount and other details of this fund will be determined at a later date. The endowment will be fully funded by the Applicant prior to ground-breaking on the project.

12.2 ACCESS RESTRICTIONS

After Burrowing Owls are confirmed occupying the mitigation area, access to the Burrowing Owl mitigation area will only be granted to qualified biologists working with/surveying the owls and agency personnel.

12.3 ADDITIONAL FIELD STUDIES AND MONITORING

BBI will monitor the site monthly for two years post-release unless the owls are known to have died. Searches would be conducted with binoculars, spotting scopes, and down-hole cameras in ways reducing owl harassment. In the case of active relocation, if Burrowing Owls are determined to have left the release sites, BBI will immediately monitor the origin site and adjacent lands to determine their disposition.

If passive relocation is conducted due to CDFG requirements and no birds are sighted within 6 months, BBI will be released from the requirement of two year post release monthly monitoring of the site. The assigned land steward will be able to determine if and when owls occupy the site after that and BBI may be brought in at that time for any further consultation.

An annual report will be submitted no later than September 15 following each breeding season. The annual report will be prepared the first year to document site conditions and presence or absence of owls, and annually thereafter if the site is occupied by the owls.

As appropriate, additional, interim reporting on the relocation efforts will be provided via electronic mail. Reports will be submitted to the CDFG and the US Fish and Wildlife Service. Reports will include, but not be limited to the following data:

- Project Name, locations, and all pertinent information pertaining to the origin site.
- Assuming active relocation; dates and numbers of owls placed into enclosures including band numbers and color bands.
- Assuming active relocation; information gained while owls are in the release enclosure; detailing feeding schedules, nest status, eggs laid, eggs hatched, chicks fledged.
- Known predators or humans visiting or disturbing the site.
- Assuming active relocation; dates of release from enclosures.
- Assuming active relocation; monthly monitoring results (resightings of color-banded birds, use of artificial burrows versus natural burrows by released adults and young).
- Assuming active relocation; any other pertinent data gathered through the relocation, release and post release monitoring.

Assuming active translocation is approved; all agencies will be informed of the date trapping efforts begin, the success of each effort until all owls are captured and relocated, the date of burrow excavations, findings, and initiation of clearing grubbing. Additionally, any owl injuries, mortality or other unforeseen circumstances will be reported to all resource agencies within 24 hours.

13.0 LITERATURE CITED

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Appendix D
California Natural Diversity Database Results, 2011

Agelaius tricolor

tricolored blackbird

Element Code: ABPBXB0020

Status

Federal: None
State: None

NDDB Element Ranks

Global: G2G3
State: S2

Other Lists

CDFG Status: SC

Habitat Associations

General: HIGHLY COLONIAL SPECIES, MOST NUMBEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro: REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Occurrence No. 400 **Map Index:** 55403 **EO Index:** 55403

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Fluctuating

Dates Last Seen

Element: 2009-04-01
Site: 2009-04-01

Record Last Updated: 2010-02-03

Quad Summary: Neenach School (3411875/188D)

County Summary: Los Angeles

Lat/Long: 34.79923º / -118.57496º
UTM: Zone-11 N3851909 E355925
Area:
Elevation: 2,893 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON

Township: 08N
Range: 16W
Section: 09 **Qtr:** NE
Meridian: S

Location: ALONG THE SHORE OF HOLIDAY LAKE. NORTH OF AVE B8, WEST OF 250TH ST W. ANTELOPE VALLEY

Ecological: 2000: HABITAT 75% CATTAIL & 25% BULRUSH. MUCH VEGETATION HAS BEEN CLEARED.

General: '92: OBS APR-OCT, MAX OF 400 ON 17 MAY. '93: 1000 OBS 9 MAY, BIRDS OBS UNTIL 31 OCT. '94: 600 OBS 8 & 500 OBS 22 MAY. '96: 15 OBS 11 MAY. '99: 10 OBS 5 SEP. '00: 210 OBS 22 APR. '05: 1000 OBS 23 APR. '06: 225 OBS 10 MAY. '09: 200 OBS 1 APR.

Owner/Manager: UNKNOWN

Arabis pulchra var. munciensis

Darwin rock-cress

Element Code: PDBRA061M3

Status

Federal: None
State: None

NDDB Element Ranks

Global: G5T4?
State: S1.3

Other Lists

CNPS List: 2.3

Habitat Associations

General: CHENOPOD SCRUB, MOJAVEAN DESERT SCRUB.
Micro: ON LIMESTONE. 1100-2075M.

Occurrence No. 8 **Map Index:** 81492 **EO Index:** 82472

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 2005-03-13
Site: 2005-03-13

Record Last Updated: 2011-01-28

Quad Summary: Neenach School (3411875/188D), Burnt Peak (3411865/163A), Lake Hughes (3411864/162B), Fairmont Butte (3411874/187C)

County Summary: Los Angeles

Lat/Long: 34.75320º / -118.49292º
UTM: Zone-11 N3846689 E363354
Area:
Elevation:

Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON

Township: 08N
Range: 15W
Section: 29 **Qtr:** XX
Meridian: S

Location: RIPLEY DESERT WOODLAND STATE PARK, FAIRMONT.

Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB TO ENCOMPASS ALL OF ARTHUR B. RIPLEY DESERT WOODLAND STATE PARK (T08N R15W SECTION 29).

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2005 PHOTO BY MILLER IN CALPHOTOS. NEEDS POPULATION INFORMATION.

Owner/Manager: DPR-RIPLEY DESERT WOODLAND SP

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 350 **Map Index:** 42520 **EO Index:** 42520
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-27
Site: 1999-06-27
Record Last Updated: 2000-07-12

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.80308º / -118.60715º
UTM: Zone-11 N3852383 E352987
Radius: 80 meters
Elevation: 2,910 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 08 **Qtr:** XX
Meridian: S

Location: SE OF THE INTERSECTION OF AVENUE B AND 270TH STREET WEST, ANTELOPE VALLEY.
Location Detail: BURROW IS LOCATED 20 FEET SOUTH OF THE INTERSECTION.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS; A STAND OF JOSHUA TREES FOUND NEARBY.
General: MALE OBSERVED AT THE BURROW DURING APR & MAY, STARTING ON 16 APR 1999. FEMALE AND YOUNG OBSERVED ON 6 JUN 1999. 2 ADULTS AND 6 JUVENILES OBSERVED ON 27 JUN 1999.
Owner/Manager: PVT?

Occurrence No. 351 **Map Index:** 42522 **EO Index:** 42522
Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-06-11
Site: 1999-06-11
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.78435º / -118.57135º
UTM: Zone-11 N3850253 E356230
Radius: 2/5 mile
Elevation: 2,940 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 15 **Qtr:** XX
Meridian: S

Location: 250TH STREET WEST, BETWEEN AVENUE C AND THE CALIFORNIA AQUEDUCT, ANTELOPE VALLEY
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: BURROW WITH FLEDGED YOUNG OBSERVED ON 11 JUN 1999.
Owner/Manager: UNKNOWN

Occurrence No. 352 **Map Index:** 42523 **EO Index:** 42523
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-26
Site: 1999-03-26
Record Last Updated: 2000-03-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.77728º / -118.58243º
UTM: Zone-11 N3849485 E355204
Radius: 1/5 mile
Elevation: 3,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 16W
Section: 16 **Qtr:** XX
Meridian: S

Location: NORTH OF AVENUE D, NEAR 256TH STREET WEST, ANTELOPE VALLEY.
Ecological: HABITAT CONSISTS OF DESERT SCRUB AND OLD AGRICULTURAL FIELDS.
General: OCCUPIED BURROW OBSERVED ON 26 MAR 1999.
Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 985 **Map Index:** 69939 **EO Index:** 70770

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.82583º / -118.44481º
UTM: Zone-11 N3854680 E367874
Radius: 80 meters **Mapping Precision**SPECIFIC
Elevation: 2,635 ft **Symbol Type:**POINT

Township: 09N
Range: 15W
Section: 35 **Qtr:** SW
Meridian: S

Location: 0.5 MILE EAST OF 180TH STREET WEST AND 1 MILE NORTH OF WEST AVENUE A, 9 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

Occurrence No. 986 **Map Index:** 69941 **EO Index:** 70771

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-09-11
Site: 2007-09-11
Record Last Updated: 2007-09-17

Quad Summary: Fairmont Butte (3411874/187C)
County Summary: Kern

Lat/Long: 34.83305º / -118.44981º
UTM: Zone-11 N3855488 E367429
Radius: 80 meters **Mapping Precision**SPECIFIC
Elevation: 2,635 ft **Symbol Type:**POINT

Township: 09N
Range: 15W
Section: 34 **Qtr:** NE
Meridian: S

Location: SOUTH SIDE OF GASKELL ROAD, JUST WEST OF 180TH STREET WEST, 9.2 MILES WSW OF WILLOW SPRINGS.

Ecological: HABITAT CONSISTS OF FRESHLY-DISKED AGRICULTURAL FIELDS DOMINATED BY RUSSIAN THISTLE; OTHER NON-NATIVE WEEDS ALSO PRESENT ON PROJECT SITE. AG LAND TO THE NORTH & EAST, JOSHUA TREE & SALTBUSH SCRUB TO THE WEST & SOUTH.

General: 1 OWL OBSERVED UTILIZING A BURROW SITE ON 11 SEP 2007.

Owner/Manager: UNKNOWN

Occurrence No. 1583 **Map Index:** 80953 **EO Index:** 81956

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-06-24
Site: 2007-06-24
Record Last Updated: 2010-12-02

Quad Summary: Del Sur (3411863/162A)
County Summary: Los Angeles

Lat/Long: 34.73194º / -118.34985º
UTM: Zone-11 N3844146 E376419
Radius: 80 meters **Mapping Precision**SPECIFIC
Elevation: 2,580 ft **Symbol Type:**POINT

Township: 07N
Range: 14W
Section: 03 **Qtr:** NE
Meridian: S

Location: ALONG S SIDE OF W AVE G, 1.4 MI W OF 110TH ST W, JUST E OF ANTELOPE VALLEY CA POPPY PRESERVE, DEL SUR.

Location Detail: BLOCK CODE 3840-375 - LOCATION CODE C. MAPPED TO PROVIDED COORDINATES.

Ecological: HABITAT CONSISTS BRUSHLAND. LOWLAND ELEVATION SUBREGION. GROUND SQUIRRELS DETECTED WITHIN 100 M OF BREEDING LOCATION.

General: 2 ADULTS AND 4 JUVENILES OBSERVED; 1 BREEDING PAIR ESTIMATED TO OCCUR IN AREA ON 24 JUN 2007.

Owner/Manager: UNKNOWN

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 1588 **Map Index:** 80959 **EO Index:** 81966
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2009-07-XX
Site: 2009-07-XX
Record Last Updated: 2010-12-02

Quad Summary: Little Buttes (3411873/187D)
County Summary: Los Angeles

Lat/Long: 34.77153º / -118.34768º
UTM: Zone-11 N3848534 E376676
Radius: 80 meters
Elevation: 2,520 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 22 **Qtr:** NE
Meridian: S

Location: 0.4 MI SW 120TH ST W AT W AVE D, ABOUT 7 MI WNW GENERAL WILLIAM J FOX AIRFIELD.
Location Detail: W OF 122ND ST W AT AVE D-4. SITE NAME L7. MAPPED TO PROVIDED COORDINATES.
General: A PAIR OF OWLS OBSERVED ON DEBRIS PILE JUL 2009.
Owner/Manager: UNKNOWN

Occurrence No. 1590 **Map Index:** 80961 **EO Index:** 81968
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-06-17
Site: 2006-06-17
Record Last Updated: 2010-12-03

Quad Summary: Little Buttes (3411873/187D)
County Summary: Los Angeles

Lat/Long: 34.80485º / -118.34019º
UTM: Zone-11 N3852220 E377411
Radius: 80 meters
Elevation: 2,510 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 11 **Qtr:** NW
Meridian: S

Location: ALONG W AVE B, 1.2 MI E OF 130TH ST W, ABOUT 7.5 MI NW OF GENERAL WILLIAM J FOX AIRFIELD.
Location Detail: BLOCK CODE 3850-375 - LOCATION CODE E. MAPPED TO PROVIDED COORDINATES.
Ecological: HABITAT CONSISTS OF BRUSHLAND. LOWLAND ELEVATION SUBREGION. GROUND SQUIRRELS DETECTED WITHIN 100 M OF BREEDING LOCATION.
General: 2 ADULTS OBSERVED AND 1 BREEDING PAIR ESTIMATED TO OCCUR IN AREA ON 17 JUN 2006.
Owner/Manager: PVT

Occurrence No. 1591 **Map Index:** 80962 **EO Index:** 81969
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2006-06-17
Site: 2006-06-17
Record Last Updated: 2010-12-03

Quad Summary: Little Buttes (3411873/187D)
County Summary: Los Angeles

Lat/Long: 34.80575º / -118.36063º
UTM: Zone-11 N3852346 E375543
Radius: 80 meters
Elevation: 2,530 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 03 **Qtr:** SW
Meridian: S

Location: NE OF 130TH ST W AT W AVE B, ABOUT 8.5 MI NW OF GENERAL WILLIAM J FOX AIRFIELD.
Location Detail: BLOCK CODE 3850-375 - LOCATION CODE A. MAPPED TO PROVIDED COORDINATES.
Ecological: HABITAT CONSISTS OF BURROW AT DISTURBED ROAD EDGE, ADJACENT TO BRUSHLAND. LOWLAND ELEVATION SUBREGION. GROUND SQUIRRELS DETECTED WITHIN 100 M OF BREEDING LOCATION.
General: 1 ADULT OBSERVED AND 1 BREEDING PAIR ESTIMATED TO OCCUR IN AREA ON 17 JUN 2006.
Owner/Manager: PVT

Athene cunicularia

burrowing owl

Element Code: ABNSB10010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status: SC

Habitat Associations
General: OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 1619 **Map Index:** 81076 **EO Index:** 82057
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2010-06-18
Site: 2010-06-18
Record Last Updated: 2010-12-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.79102º / -118.50402º
UTM: Zone-11 N3850899 E362401
Area: 40.0 acres **Mapping Precision**SPECIFIC
Elevation: 2,740 ft **Symbol Type:**POLYGON

Township: 08N
Range: 15W
Section: 07 **Qtr:** SE
Meridian: S

Location: ABOUT 1 MI N OF W AVE D AT 210TH ST W (NEENACH SUBSTATION), 4 MI E OF HOLIDAY LAKE.

Location Detail: THREE TERRITORIES INCLUDE MOST OF SE 1/4 OF SE1/4 OF SECTION 7. MAPPED TO QUARTER-QUARTER SECTION.

Ecological: HABITAT CONSISTS OF FALLOW AGRICULTURE FIELDS, SURROUNDED BY RABBITBRUSH & SOME JOSHUA TREES & CALIFORNIA JUNIPERS. LEVEL TOPOGRAPHY. GOLDEN EAGLE, NORTHERN HARRIER & KESTREL SIGHTED IN VICINITY ON PREVIOUS VISITS.

Threat: THREATENED BY POSSIBLE SOLAR ENERGY DEVELOPMENT.

General: 2 PAIRS OF OWLS AND 1 FLOATER MALE (5 ADULTS AND 3 TERRITORIES IN TOTAL), AND 4 JUVENILES OBSERVED 18 JUN 2010.

Owner/Manager: PVT

Occurrence No. 1620 **Map Index:** 81077 **EO Index:** 82058
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2007-07-02
Site: 2007-07-02
Record Last Updated: 2010-12-13

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles

Lat/Long: 34.79784º / -118.59641º
UTM: Zone-11 N3851787 E353960
Area: 10.0 acres **Mapping Precision**SPECIFIC
Elevation: 2,920 ft **Symbol Type:**POLYGON

Township: 08N
Range: 16W
Section: 08 **Qtr:** N
Meridian: S

Location: 0.2 MI NNW AND ENE OF 265TH ST W AT W AVE B-8, 1 MI W OF HOLIDAY LAKE.

Location Detail: BLOCK CODE 3850-350 - LOCATION CODES A (WEST) AND B (EAST). MAPPED TO PROVIDED COORDINATES.

Ecological: BURROW AT "A" WAS A HALF-BURIED RUSTY IRRIGATION PIPE WITH MANY PELLETS AND WHITEWASH AT THE ENTRANCE. BURROW AT "B" IS A SQUIRREL MOUND WITH WHITEWASH & FEATHERS, BUT NO PELLETS. HABITAT CONSISTS OF IDLE OR FALLOW FIELD FOR SHEEP GRAZING.

General: 2 OWLS OBSERVED FIGHTING NEAR B; 1 INDIVIDUAL CARRIED NESTING MATERIAL (GRASS) BACK TO LOCATION B BURROW ON 2 JUL 2007. SQUIRREL BURROWS IN AREA, BUT NO SQUIRRELS DETECTED.

Owner/Manager: PVT

California macrophylla

round-leaved filaree

Element Code: PDGER01070

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CNPS List: 1B.1

Habitat Associations
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.
Micro: CLAY SOILS. 15-1200M.

Occurrence No. 7 **Map Index:** 01640 **EO Index:** 45686

Dates Last Seen
Element: 1888-06-XX
Site: 1888-06-XX
Record Last Updated: 2001-08-28

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66387º / -118.40396º
UTM: Zone-11 N3836665 E371359
Radius: 1 mile
Elevation: 3,320 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 14W
Section: 30 **Qtr:** XX
Meridian: S

Location: ELIZABETH LAKE.
General: SITE BASED ON AN 1888 COLLECTION BY PARISH. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No. 103 **Map Index:** 75412 **EO Index:** 76415

Dates Last Seen
Element: 2007-04-25
Site: 2007-04-25
Record Last Updated: 2010-12-16

*** SENSITIVE ***
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: La Liebre Ranch (3411876/188C)
County Summary: Kern

*** SENSITIVE ***
Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section: **Qtr:**
Meridian:

Location: *SENSITIVE* Location information suppressed.
Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: ALLUVIAL TERRACES WITH GENTLE TO MODERATE SLOPES. CRACKED CLAY SOILS. ASSOC WITH ACHYRACHAENA MOLLIS, MICROSERIS DOUGLASII, LAYIA, LUPINUS MICROCARPUS, ANCISTROCARPHUS FILAGINEUS, GUILLENIA LEMMONII, PHACELIA CILIATA, MONOLOPIA LANCEOLATA.
Threat: THREATENED BY EXOTIC PLANTS AND POSSBILE FUTURE CONSTRUCTION WORK.
Owner/Manager:

Occurrence No. 120 **Map Index:** 78381 **EO Index:** 79298

Dates Last Seen
Element: 2004-04-21
Site: 2004-04-21
Record Last Updated: 2010-03-22

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: La Liebre Ranch (3411876/188C)
County Summary: Los Angeles

Lat/Long: 34.77649º / -118.67188º
UTM: Zone-11 N3849530 E347016
Area: 104.0 acres
Elevation: 3,100 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 17W
Section: 15 **Qtr:** S
Meridian: S

Location: TEJON RANCH; ALONG SR 138 NEAR TENTROCK CANYON AND HORSE CAMP CANYON, LA LIEBRE.
Location Detail: MAPPED BY CNDDB AS 9 POLYGONS ACCORDING TO 2004 VOLLMAR CONSULTING DIGITAL DATA.
Ecological: LIMESTONE-DERIVED, FRIABLE, CLAY LOAM SOILS. ASSOCIATES INCLUDE MONOLOPIA LANCEOLATA, PHACELIA CILIATA, LEPIDIUM NITIDUM, & DICHELOSTEMMA CAPITATUM.
Threat: DEVELOPMENT.
General: 3340 TO >6900 PLANTS SEEN IN PORTIONS OF SITE IN 2003. 1560 TO >4100 SEEN IN PORTIONS OF SITE IN 2004.
Owner/Manager: PVT-TEJON RANCH CO

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 3 **Map Index:** 01210 **EO Index:** 18563

Dates Last Seen
Element: 1972-XX-XX
Site: 1979-06-12
Record Last Updated: 1989-08-11

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69858º / -118.50925º
UTM: Zone-11 N3840654 E361769
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 18 **Qtr:** N
Meridian: S

Location: 0.1 MI SE OF PINE CYN FOREST STATION, W OF LAKE HUGHES, ALONG HWY N2.
Ecological: IN WOODLAND. ASSOCIATED WITH QUERCUS CHRYSOLEPIS, POISON OAK AND RHAMNUS CROCEA.
Threat: HEAVY GRAZING HAS ELIMINATED PLANT ABOVE FENCE LINE.
Owner/Manager: USFS-ANGELES NF

Occurrence No. 16 **Map Index:** 01386 **EO Index:** 18554

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-11

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69948º / -118.46240º
UTM: Zone-11 N3840691 E366061
Radius: 2/5 mile
Elevation: 4,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 15 **Qtr:** E
Meridian: S

Location: TROEDEL SPRINGS PLATEAU, PORTAL RIDGE.
Location Detail: MAPPED IN VICINITY OF TROEDEL SPRINGS; LOCATION VAGUE.
General: NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No. 17 **Map Index:** 01262 **EO Index:** 18550

Dates Last Seen
Element: 1982-06-17
Site: 1982-06-17
Record Last Updated: 2007-09-10

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69831º / -118.49703º
UTM: Zone-11 N3840607 E362888
Radius: 1/5 mile
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 17 **Qtr:** NW
Meridian: S

Location: 0.7 MI UP DIRT RD NORTH OF PINE CANYON RD, 0.3 TO 0.5 MI E OF REST AREA.
Ecological: IN LOOSE, LIGHT SOIL AND ROCKY OUTCROPS; ASSOCIATED WITH ERIOGONUM FASCICULATUM, YUCCA WHIPPLEI, QUERCUS DUMOSA, AVENA SP., AND CERCOCARPUS BETULOIDES.
General: EXCELLENT TO GOOD CONDITION IN 1982.
Owner/Manager: USFS-ANGELES NF

Calystegia peirsonii

Peirson's morning-glory

Element Code: PDCON040A0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists
CNPS List: 4.2

Habitat Associations
General: CHAPARRAL, COASTAL SCRUB, CHENOPOD SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: OFTEN IN DISTURBED AREAS OR ALONG ROADSIDES OR IN GRASSY, OPEN AREAS. 390-1470M.

Occurrence No. 28 **Map Index:** 01047 **EO Index:** 18540

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67891º / -118.45222º
UTM: Zone-11 N3838395 E366961
Radius: 2/5 mile
Elevation: 1,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NEAR JCT LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 29 **Map Index:** 01019 **EO Index:** 12608

Dates Last Seen
Element: 1982-XX-XX
Site: 1982-XX-XX
Record Last Updated: 2007-09-10

Occ Rank: Excellent
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68865º / -118.47912º
UTM: Zone-11 N3839512 E364512
Radius: 2/5 mile
Elevation: 2,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 16 **Qtr:** SW
Meridian: S

Location: 1.8 MI NW OF JCT OF LAKE HUGHES RD & ELIZABETH LAKE CANYON RD.

Owner/Manager: USFS-ANGELES NF

Charadrius montanus

mountain plover

Element Code: ABNNB03100

Status
Federal: Proposed Threatened
State: None

NDDB Element Ranks
Global: G2
State: S2?

Other Lists
CDFG Status: SC

Habitat Associations
General: SHORT GRASSLANDS, FRESHLY PLOWED FIELDS, NEWLY SPROUTING GRAIN FIELDS, & SOMETIMES SOD FARMS
Micro: SHORT VEGETATION, BARE GROUND & FLAT TOPOGRAPHY. PREFERS GRAZED AREAS & AREAS WITH BURROWING RODENTS.

Occurrence No. 9 **Map Index:** 41848 **EO Index:** 41848

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1999-03-12
Site: 1999-03-12
Record Last Updated: 1999-11-09

Quad Summary: Little Buttes (3411873/187D)
County Summary: Los Angeles

Lat/Long: 34.78775º / -118.34465º
UTM: Zone-11 N3850329 E376978
Radius: 1/10 mile
Elevation: 2,510 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 15 **Qtr:** NE
Meridian: S

Location: WEST SIDE OF 120TH STREET WEST, 0.8 MILE NORTH OF AVENUE D, 3 MILES NW OF ANTELOPE ACRES.

Ecological: HABITAT CONSISTS OF A SPARSE, OPEN FIELD, WITH LOW RUDERAL GROWTH; SURROUNDED BY AGRICULTURAL FIELDS. HORNED LARKS OBSERVED UTILIZING THE SAME FIELD.

General: 24 INDIVIDUALS OBSERVED WINTERING ON 12 MAR 1999.

Owner/Manager: UNKNOWN

Chorizanthe parryi var. fernandina

San Fernando Valley spineflower

Element Code: PDPGN040J1

Status

Federal: Candidate
State: Endangered

NDDB Element Ranks

Global: G2T1
State: S1.1

Other Lists

CNPS List: 1B.1

Habitat Associations

General: COASTAL SCRUB.
Micro: SANDY SOILS. 3-1035M.

Occurrence No. 2 **Map Index:** 01640 **EO Index:** 21126

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen

Element: 1929-05-21
Site: 199X-XX-XX

Record Last Updated: 2008-09-29

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66387º / -118.40396º
UTM: Zone-11 N3836665 E371359
Radius: 1 mile
Elevation: 3,320 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 07N
Range: 14W
Section: 30 **Qtr:** XX
Meridian: S

Location: ELIZABETH LAKE.

Location Detail: MAPPED AT ELIZABETH LAKE IN THE ANGELES NATIONAL FOREST.

Ecological: FOUND ON SANDY BANKS.

General: SITE BASED ON 3 COLLECTIONS; HOFFMANN IN 1928 & 1929, AND AN UNDATED COLLECTION BY HALL. NO INDIVIDUALS LOCATED DURING SURVEYS IN THIS AREA OVER THE LAST TEN YEARS, DESPITE THE PRESENCE OF SUITABLE HABITAT (SEE STO99U0001). NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Cryptantha clokeyi

Clokey's cryptantha

Element Code: PDBOR0A3M0

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2

Other Lists
CNPS List: 1B.1

Habitat Associations
General: MOJAVEAN DESERT SCRUB.
Micro: SANDY OR GRAVELLY SOILS. ONE SITE: 850M.

Occurrence No. 7 **Map Index:** 78565 **EO Index:** 79495

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 2003-04-14
Site: 2003-04-14
Record Last Updated: 2010-04-13

Quad Summary: Lake Hughes (3411864/162B), Del Sur (3411863/162A), Fairmont Butte (3411874/187C)
County Summary: Los Angeles

Lat/Long: 34.73679º / -118.38335º
UTM: Zone-11 N3844726 E373359
Area:
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 14W
Section: 32 **Qtr:** XX
Meridian: S

Location: ANTELOPE VALLEY CALIFORNIA POPPY RESERVE.

Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB NON-SPECIFICALLY TO ENCOMPASS THE ENTIRE RESERVE. THIS IS NOT THE BEST, BUT WE NEED BETTER LOCATION DATA.

Ecological: VALLEY GRASSLAND IN SANDY SOIL DOMINATED BY ERODIUM CICUTARIUM, ESCHSCHOLZIA, PLATYSTEMON CALIFORNICUS, POA, CHAENACTIS, AND LINANTHUS.

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2003 COLLECTION BY DEAN, ET AL.

Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Falco mexicanus

prairie falcon — **Element Code:** ABNKD06090

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S3

Other Lists
CDFG Status:

Habitat Associations
General: INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.
Micro: BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

Occurrence No. 239 **Map Index:** 00792 **EO Index:** 26173

Dates Last Seen
Element: 1980-05-29
Site: 1980-05-29
Record Last Updated: 1989-08-10

*** SENSITIVE ***

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

*** SENSITIVE ***

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.
Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Owner/Manager:

Occurrence No. 240 **Map Index:** 00764 **EO Index:** 26172

Dates Last Seen
Element: 1980-06-02
Site: 1980-06-02
Record Last Updated: 1989-08-10

*** SENSITIVE ***

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

*** SENSITIVE ***

Lat/Long:
UTM:
Radius:
Elevation:
Mapping Precision:
Symbol Type:
Township:
Range:
Section:
Meridian:
Qtr:

Location: *SENSITIVE* Location information suppressed.
Location Detail: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Owner/Manager:

Lasiurus cinereus

hoary bat

Element Code: AMACC05030

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4?

Other Lists
CDFG Status:

Habitat Associations
General: PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER & OPEN AREAS OR HABITAT EDGES FOR FEEDING.
Micro: ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Occurrence No. 50 **Map Index:** 68504 **EO Index:** 68809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1938-07-15
Site: 1938-07-15
Record Last Updated: 2007-03-16

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67609º / -118.44615º
UTM: Zone-11 N3838075 E367513
Radius: 4/5 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 23 **Qtr:** XX
Meridian: S

Location: LAKE HUGHES.
Location Detail: EXACT LOCATION UNKNOWN. MAPPED AS BEST ESTIMATE AROUND COMMUNITY OF LAKE HUGHES.
General: 1 MALE SPECIMEN (LACM #5003) COLLECTED BY J. VON BLOEKER ON 15 JUL 1938.
Owner/Manager: UNKNOWN

Leptosiphon serrulatus

Madera leptosiphon

Element Code: PDPLM09130

Status

Federal: None
State: None

NDDB Element Ranks

Global: G1?
State: S1?

Other Lists

CNPS List: 1B.2

Habitat Associations

General: CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.

Micro: DRY SLOPES; OFTEN ON DECOMPOSED GRANITE IN WOODLAND. 80-1575M.

Occurrence No. 22 **Map Index:** 74657 **EO Index:** 75589

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen

Element: 1935-05-20
Site: 1935-05-20

Record Last Updated: 2009-04-20

Quad Summary: Liebre Twins (3411885/188A), Cummings Mtn. (3511815/213D), Tejon Ranch (3511816/213C), Winters Ridge (3411886/188B)

County Summary: Kern

Lat/Long: 34.96987º / -118.63274º
UTM: Zone-11 N3870920 E350948
Radius: 5 mile
Elevation: 1,000 ft

Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT

Township: 10N
Range: 16W
Section: 07 **Qtr:** XX
Meridian: S

Location: TEHACHAPI MOUNTAINS.

Location Detail: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS TEHACHAPI MOUNTAINS; THIS IS A LARGE AREA AND NO ADDITIONAL INFORMATION WAS GIVEN ON HERBARIUM LABEL TO NARROW DOWN WHERE IN THE TEHACHAPI MTNS THIS PLANT OCCURS.

Ecological: N SLOPE AMONG SCATTERED OAKS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1935 ANDERSON COLLECTION. THIS IS A SOUTHERLY EXTENSION OF THE KNOWN RANGE OF THE PLANT; ID SHOULD BE DOUBLE-CHECKED, ANNOTATED IN 1941 BY MASON AS L. SERRULATUS. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Perognathus alticolus inexpectatus

Tehachapi pocket mouse

Element Code: AMAFD01082

Status
Federal: None
State: None

NDDB Element Ranks
Global: G1G2T1T2
State: S1S2

Other Lists
CDFG Status: SC

Habitat Associations
General: ARID ANNUAL GRASSLAND & DESERT SHRUB COMMUNITIES, BUT ALSO TAKEN IN FALLOW GRAIN FIELD & IN RUSSIAN THISTLE.
Micro: BURROWS FOR COVER & NESTING. AESTIVATES AND HIBERNATES DURING EXTREME WEATHER. FORAGES ON OPEN GROUND & UNDER SHRUBS.

Occurrence No. 10 **Map Index:** 59036 **EO Index:** 23897
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown

Dates Last Seen
Element: 1938-07-16
Site: 1981-07-24
Record Last Updated: 2006-08-07

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66906º / -118.42287º
UTM: Zone-11 N3837265 E369635
Area:
Elevation: 3,400 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 25 **Qtr:** XX
Meridian: S

Location: VICINITY OF ELIZABETH LAKE & HUGHES LAKE.
Location Detail: IN 1981, SULENTICH TRAPPED 0.25 MI NE LAKE HUGHES AT 3375 FT AND HAD NO SUCCESS. ALSO NO SUCCESS 200 M NORTH OF WEST END LAKE ELIZABETH AT 3400 FT.
General: LACM # 5017-5019 COLLECTED 15 JULY TO 16 JULY 1938 FROM ELIZABETH LAKE AND # 5020 COLLECTED 14 JULY 1938 FROM HUGHES LAKE.
Owner/Manager: USFS-ANGELES NF, PVT

Occurrence No. 18 **Map Index:** 65730 **EO Index:** 65809
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1965-05-08
Site: 1965-05-08
Record Last Updated: 2006-08-09

Quad Summary: La Liebre Ranch (3411876/188C)
County Summary: Los Angeles

Lat/Long: 34.78328º / -118.65792º
UTM: Zone-11 N3850262 E348306
Radius: 1 mile
Elevation: 3,000 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 17W
Section: 14 **Qtr:** XX
Meridian: S

Location: ABOUT 5 ROAD MILES EAST OF QUAIL LAKE ALONG HWY 138.
Location Detail: LOCATION GIVEN ONLY AS "5 MI E QUAIL LAKE". MAPPED AT THE COORDINATES GIVEN BY MANIS WITH A LOCATION UNCERTAINTY OF 6 MILES.
General: LACM #48790 COLLECTED 8 MAY 1965 BY R. G. HANNUM.
Owner/Manager: UNKNOWN

Phrynosoma blainvillii

coast horned lizard

Element Code: ARACF12100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4G5
State: S3S4

Other Lists
CDFG Status: SC

Habitat Associations
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.

Occurrence No. 157 **Map Index:** 01549 **EO Index:** 28059

Dates Last Seen
Element: 1958-08-02
Site: 1958-08-02

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 2011-03-17

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, 4 MI NORTH OF LAKE HUGHES.
Location Detail: SDNHM #19362 STATED LOCALITY AS " FAIRMONT". EXACT LOCATION IS UNKNOWN.
General: SDNHM SPECIMEN #19362 COLLECTED BY J.D. NOKES ON 2 AUG 1958.
Owner/Manager: UNKNOWN

Occurrence No. 458 **Map Index:** 46981 **EO Index:** 46981

Dates Last Seen
Element: 2001-09-27
Site: 2001-09-27

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 2002-01-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66957º / -118.43252º
UTM: Zone-11 N3837334 E368752
Radius: 80 meters
Elevation: 3,287 ft
Mapping PrecisionSPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 26 **Qtr:** NE
Meridian: S

Location: PAINTED TURTLE CAMP, LAKE HUGHES.
Ecological: HABITAT CONSISTS OF RECOVERING CHAPARRAL.
Threat: THREATENED BY OFF-ROAD VEHICLES.
General: 1 JUVENILE OBSERVED FORAGING IN OPEN CHAPARRAL ON 27 SEP 2001.
Owner/Manager: PVT

Southern Cottonwood Willow Riparian Forest

Element Code: CTT61330CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 36 **Map Index:** 01077 **EO Index:** 15815

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-02
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Warm Springs Mountain (3411855/163D), Lake Hughes (3411864/162B), Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.63591º / -118.52912º
UTM: Zone-11 N3833731 E359843
Area: 380.5 acres
Elevation: 2,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 06N
Range: 16W
Section: XX **Qtr:** XX
Meridian: S

Location: ELIZABETH LAKE CANYON, FROM NEAR DEER CANYON D/S TO PROSPECT CREEK.

Ecological: ALNUS RHOMBIFOLIA ALONG FLOWING CREEK; SCATTERED POPULUS FREMONTII OVER BACCHARIS VIMINEA ON FLOODPLAIN. SYCAMORES AND ALDERS FOR SHORT WAY D/S OF FISH CANYON. QUERCUS AGRIFOLIA AT OUTER FLOODPLAIN EDGES BELOW RED FOX CANYON.

Threat: RIP-RAP ON NORTH SHORE FOR 1/2 MILE BELOW CAMPGROUND. WIESLANDER/HOLLAND MAPS SIMILIAR.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 37 **Map Index:** 01082 **EO Index:** 15813

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-20

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72079º / -118.55064º
UTM: Zone-11 N3843175 E358016
Area: 113.3 acres
Elevation: 3,760 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 02 **Qtr:** S
Meridian: S

Location: KINGS CANYON, WEST OF KINGS CANYON RANCH FOR ABOUT 1.3 MILES.

Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOGRAPHS.

Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: FIELD VERIFICATION NEEDED. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 38 **Map Index:** 01450 **EO Index:** 15811

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Dates Last Seen
Element: 1988-04-02
Site: 1988-04-02
Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.66348º / -118.45549º
UTM: Zone-11 N3836688 E366637
Area: 200.9 acres
Elevation: 3,120 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 27 **Qtr:** E
Meridian: S

Location: ELIZABETH LAKE CANYON, FROM HUGHES LAKE D/S FOR ABOUT 1.5 MILES, & TRIBUTARY.

Ecological: COTTONWOODS OVER WILLOW SEEN 1988. NO WATER IN STREAM ON DAY OF APRIL VISIT. WIESLANDER MAPPED

Threat: PEAR ORCHARDS ENCROACHING

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT IN USFS-ANGELES NF

Southern Cottonwood Willow Riparian Forest

Element Code: CTT61330CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 39 **Map Index:** 01447 **EO Index:** 15812

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown

Dates Last Seen
Element: 1935-XX-XX
Site: 1988-04-02

Record Last Updated: 1998-07-20

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.67398º / -118.45439º
UTM: Zone-11 N3837852 E366755
Area: 63.1 acres
Elevation: 3,400 ft

Mapping PrecisionSPECIFIC
Symbol Type:POLYGON

Township: 07N
Range: 15W
Section: 22 **Qtr:** SE
Meridian: S

Location: NORTH & WEST SHORE HUGHES LAKE & SURROUNDINGS.

Location Detail: ONCE CONTINUOUS W/ OCC #038.

Ecological: WIESLANDER MAPPED AS CLOSED CANOPY WILLOWS. POPULUS FREMONTII PRESENT BUT UNDERSTORY DEVELOPED. EXTIRPATED AS A NATURAL COMMUNITY.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT

Southern Riparian Forest

Element Code: CTT61300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 14 **Map Index:** 01080 **EO Index:** 16035

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.70338º / -118.54557º
UTM: Zone-11 N3841237 E358451
Area: 61.4 acres
Elevation: 4,170 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 11 **Qtr:** XX
Meridian: S

Location: HIDEWAY CANYON, FOR ABOUT 0.9 MILE U/S (SOUTH) OF PINE CANYON ROAD.

Location Detail: BOUNDARY REPRESENTS EXTENT AS INTERPRETED FROM 1978 AERIAL PHOTOS.

Ecological: DENSE COVER. VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: NEEDS FIELD VISIT. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 15 **Map Index:** 01150 **EO Index:** 16036

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1989-08-10

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.69571º / -118.52674º
UTM: Zone-11 N3840360 E360162
Area: 37.7 acres
Elevation: 4,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 13 **Qtr:** E
Meridian: S

Location: SHAKE CANYON, BETWEEN UPPER & LOWER SHAKE CAMPGROUNDS.

Location Detail: INTERPRETED FROM 1978 AERIAL PHOTOS.

Ecological: VEGETATION COMPOSITION UNKNOWN. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: NEEDS FIELD VISIT. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Southern Riparian Scrub

Element Code: CTT63300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 28 **Map Index:** 01096 **EO Index:** 15316

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Neenach School (3411875/188D), Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74258º / -118.53965º
UTM: Zone-11 N3845576 E359059
Area: 68.7 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 35 **Qtr:** E
Meridian: S

Location: BALDWIN GRADE CANYON, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 29 **Map Index:** 01113 **EO Index:** 15314

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.74261º / -118.53536º
UTM: Zone-11 N3845573 E359452
Area: 46.2 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** NW
Meridian: S

Location: UNNAMED CANYON TO EAST OF BALDWIN GRADE CANYON, EAST OF DANIELSON MOTORWAY.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: NEEDS FIELD VERIFICATION OF VEGETATION CONDITION, COMPOSITION. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 30 **Map Index:** 01161 **EO Index:** 15313

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-23

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.73524º / -118.52275º
UTM: Zone-11 N3844738 E360594
Area: 44.9 acres
Elevation: 3,400 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 16W
Section: 36 **Qtr:** SE
Meridian: S

Location: NORTH LONG CANYON, SOUTH OF LOS ANGELES AQUEDUCT.

Ecological: 1978 EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: EXTENT MAPPED FROM INTERPRETATION OF AERIAL PHOTOGRAPHS. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Southern Sycamore Alder Riparian Woodland

Element Code: CTT62400CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G4
State: S4

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 95 **Map Index:** 01197 **EO Index:** 15459

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-22

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.65990º / -118.51471º
UTM: Zone-11 N3836372 E361205
Area: 467.4 acres
Elevation: 3,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 31 **Qtr:** NW
Meridian: S

Location: FISH CREEK, FROM "THE POTHOLES" D/S TO ELIZABETH LAKE CANYON.

Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.

Ecological: LONG REACHES OF SCRUB W/CLOSED CANOPY QUERCUS AGRIFOLIA, ALNUS RHOMBIFOLIA & PLATANUS RACEMOSA.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 102 **Map Index:** 00833 **EO Index:** 15454

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-22

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Whitaker Peak (3411856/163C), Burnt Peak (3411865/163A), Liebre Mtn. (3411866/163B), Warm Springs Mountain (3411855/163D)
County Summary: Los Angeles

Lat/Long: 34.64800º / -118.60544º
UTM: Zone-11 N3835180 E352869
Area: 1,061.0 acres
Elevation: 2,040 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 06N
Range: 17W
Section: 12 **Qtr:** XX
Meridian: S

Location: FISH CANYON, SOUTH OF THE PIANOBOX PROSPECT AND EAST FORK FISH CANYON, INCLUDING BURNT PEAK & LION CANYONS.

Ecological: OPEN CANOPY ALNUS RHOMBIFOLIA & BACCHARIS VIMINEA BELOW CAMPGROUND ACC TO WIESLANDER SURVEY. 30-40% TREE COVER PER 1978 AIR PHOTOS ABOVE CAMP, OPEN ALNUS, PLATANUS, POPULUS, BACCHARIS & ERIOGONUM FASCIC PER WIESLANDER; TREES 10-30%, 1978.

Threat: CAMPGROUND DISTURBS.

General: RECENT GROUND TRUTH NEEDED. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Southern Willow Scrub

Element Code: CTT63320CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 19 **Map Index:** 00901 **EO Index:** 15277

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.67847º / -118.60593º
UTM: Zone-11 N3838561 E352878
Area: 305.1 acres
Elevation: 3,720 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: XX **Qtr:** XX
Meridian: S

Location: FISH CANYON, NORTH OF LITTLE BURNT PEAK D/S FOR ABOUT 3.5 MILES.

Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.

Ecological: WILLOW SCRUB WITH BACCHARIS VIMINEA, LEPIDOSPARTUM SQUAMATUM AND WIDELY SCATTERED PLATANUS RACEMOSA.

General: GROUND TRUTH NEEDED. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 22 **Map Index:** 01613 **EO Index:** 15274

Dates Last Seen
Element: 1978-09-19
Site: 1978-09-19
Record Last Updated: 1998-07-21

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.70119º / -118.40966º
UTM: Zone-11 N3840811 E370895
Area: 28.5 acres
Elevation: 2,880 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 14W
Section: 18 **Qtr:** NW
Meridian: S

Location: MYRICK CANYON, JUST EAST OF CALIFORNIA AQUEDUCT.

Location Detail: MAPPED FROM INTERPRETATION OF AERIAL PHOTOS.

Ecological: UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: NEEDS FIELD VERIFICATION. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Taxidea taxus

American badger

Element Code: AMAJF04010

Status
Federal: None
State: None

NDDB Element Ranks
Global: G5
State: S4

Other Lists
CDFG Status: SC

Habitat Associations
General: MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.
Micro: NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.

Occurrence No. 26 **Map Index:** 56527 **EO Index:** 56543
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-05-16
Site: 1988-05-16
Record Last Updated: 2004-08-30

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.68657º / -118.45049º
UTM: Zone-11 N3839243 E367132
Area:
Elevation: 3,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 15W
Section: 22 **Qtr:** NE
Meridian: S

Location: 0.6 MILE NORTH OF LAKE HUGHES.
Ecological: HABITAT CONSISTS OF CHAPARRAL, DOMINATED BY ADENOSTOMA, ARCTOSTAPHYLOS, CEANOTHUS, CERCOCARPUS, AND PINUS COULTERI.
Threat: POSSIBLY THREATENED BY A WASTEWATER TREATMENT PLANT.
General: AN ACTIVE DEN WAS OBSERVED, 13-16 MAY 1988.
Owner/Manager: UNKNOWN

Occurrence No. 151 **Map Index:** 01549 **EO Index:** 56863
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1904-06-21
Site: 1904-06-21
Record Last Updated: 2004-09-20

Quad Summary: Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.73609º / -118.42397º
UTM: Zone-11 N3844700 E369639
Radius: 1 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 15W
Section: 36 **Qtr:** SW
Meridian: S

Location: FAIRMONT, ANTELOPE VALLEY.
Location Detail: MAPPED ACCORDING TO LAT/LONG GIVEN BY MVZ; MAX ERROR DISTANCE: 1 KM.
General: MALE COLLECTED (MVZ #7077) BY JOSEPH GRINNELL ON 21 JUN 1904. 1 COLLECTED (DATE UNKNOWN), LACM.
Owner/Manager: UNKNOWN

Occurrence No. 334 **Map Index:** 57756 **EO Index:** 57772
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX
Record Last Updated: 2004-10-27

Quad Summary: Neenach School (3411875/188D)
County Summary: Los Angeles, Kern

Lat/Long: 34.82942º / -118.57052º
UTM: Zone-11 N3855251 E356383
Radius: 1 mile
Elevation:
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 09N
Range: 16W
Section: 34 **Qtr:** XX
Meridian: S

Location: ANTELOPE VALLEY, NEAR NEENACH, KERN COUNTY.
Location Detail: AREA MAPPED IS IN THE VICINITY OF THE LOS ANGELES AQUEDUCT TO THE NORTH AND THE KERN COUNTY LINE TO THE SOUTH.
General: 1 COLLECTED, FMNH (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO).
Owner/Manager: UNKNOWN

Toxostoma lecontei

Le Conte's thrasher

Element Code: ABPBK06100

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3

Other Lists
CDFG Status: SC

Habitat Associations
General: DESERT RESIDENT; PRIMARILY OF OPEN DESERT WASH, DESERT SCRUB, ALKALI DESERT SCRUB, AND DESERT SUCCULENT SCRUB HABITATS.
Micro: COMMONLY NESTS IN A DENSE, SPINY SHRUB OR DENSELY BRANCHED CACTUS IN DESERT WASH HABITAT, USUALLY 2-8 FEET ABOVE GROUND.

Occurrence No. 57 **Map Index:** 01703 **EO Index:** 24519
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1968-09-21
Site: 1968-09-21
Record Last Updated: 1989-08-10

Quad Summary: Willow Springs (3411883/187A), Tylerhorse Canyon (3411884/187B), Fairmont Butte (3411874/187C), Little Buttes (3411873/187D)
County Summary: Kern

Lat/Long: 34.87886º / -118.38201º
UTM: Zone-11 N3860480 E373699
Radius: 1 mile
Elevation: 2,720 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 09N
Range: 14W
Section: 08 **Qtr:** SE
Meridian: S

Location: 5 MILES WEST OF WILLOW SPRINGS, IN THE VICINITY OF THE INTERSECTION OF MEERS ROAD AND 104TH STREET WEST.
General: LACM SPECIMEN #80669.
Owner/Manager: UNKNOWN

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 5 **Map Index:** 01705 **EO Index:** 13582

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX
Record Last Updated: 1998-07-15

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RESERVE. 2 MILES EAST OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.
Location Detail: TOP & SIDES OF BUTTES. MAPPED AS GENERAL DUE TO SIZE.
Ecological: NASSELLA COVERS (5-30%). SLOPE 5-80%. SANDY-GRAVELLY SOIL.
Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.
General: FAIRLY UNDISTURBED. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Occurrence No. 6 **Map Index:** 01713 **EO Index:** 25050

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX
Record Last Updated: 1998-07-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.69887º / -118.38036º
UTM: Zone-11 N3840517 E373575
Radius: 1/5 mile
Elevation: 2,800 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 14W
Section: 17 **Qtr:** NE
Meridian: S

Location: 2 MILES DUE NORTH OF ELIZABETH LAKE ON NORTH SIDE OF MUNZ RANCH ROAD.
Ecological: DOMINANTS: NASSELLA CERNUA, POA SECUNDA, SITANION, HAPLOPAPPUS. SANDY-GRAVELLY SOIL. SLOPE 0 TO 60%.
General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
Owner/Manager: UNKNOWN

Occurrence No. 22 **Map Index:** 01627 **EO Index:** 19752

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25
Record Last Updated: 1998-07-15

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71942º / -118.40731º
UTM: Zone-11 N3842830 E371139
Radius: 1/5 mile
Elevation: 2,900 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 14W
Section: 06 **Qtr:** SW
Meridian: S

Location: SE OF FAIRMONT. EAST OF ROAD 160 ON STEEP SLOPES. SOUTH OF ANTELOPE VALLEY POPPY RESERVE.
Location Detail: SOUTH & EAST ASPECT.
Ecological: NASSELLA CERNUA DOM. SOIL SANDY, GRAVELLY, SLOPE 60-80%. ASSOC. SPP: POA SECUNDA VAR. SECUNDA, SITANION, BROMUS TECTORUM & B. RUBENS. ESCHSCHOLZIA ON BLUFFS ABOVE RAVINES.
Threat: DRY FARMING AND SOME IRRIGATION ON FLATS. AREA BISECTED BY RAVINES.
General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
Owner/Manager: UNKNOWN

Valley Needlegrass Grassland

Element Code: CTT42110CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S3.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 57 **Map Index:** 24322 **EO Index:** 6457

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1992-04-09
Site: 1992-04-09
Record Last Updated: 1998-07-15

Quad Summary: Neenach School (3411875/188D)
County Summary: Kern

Lat/Long: 34.85879º / -118.60543º
UTM: Zone-11 N3858559 E353243
Area: 207.2 acres
Elevation: 3,360 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 09N
Range: 16W
Section: 19 **Qtr:** NE
Meridian: S

Location: WESTERN ANTELOPE VALLEY. 5 MILES DUE NORTH OF NEENACH SCHOOL AND HWY 138 BETWEEN 270TH AND 280TH STREETS.

Location Detail: SINGLE PATCH OF VEGETATION ON GRADUAL SOUTHWEST-FACING SLOPE NEAR THE BASE OF THE BAJADA. SOUTH SLOPE OF THE TEHACHAPIS.

Ecological: SHRUB/PERENNIAL GRASS LAYER DOMINATED BY ACHNATHERUM SPECIOSUM (72%) WITH STEPHANOMERIA ALSO PRESENT. HERB LAYER INCLUDES ERODIUM CICUTARIUM, CAMISSONIA, ERIOGONUM, OENOTHERA DELTOIDES, BROMUS MADRITENSIS RUBENS.

Threat: POTENTIAL THREATS INCLUDE DEVELOPMENT AND CULTIVATION.

General: SOIL IS GRANITIC WITH SOME INDIVIDUAL MARBLE (DOLOMITE) STONES AND FINE ANGULAR DECOMPOSED GRANITE ON THE SURFACE. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT-TEJON RANCH CO

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 77 **Map Index:** 00897 **EO Index:** 12450

Dates Last Seen
Element: 1988-03-31
Site: 1988-03-31
Record Last Updated: 1998-07-31

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.72400º / -118.60150º
UTM: Zone-11 N3843603 E353364
Area: 191.4 acres
Elevation: 4,080 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 16W
Section: 05 **Qtr:** W
Meridian: S

Location: NORTH-FACING & NE-FACING HILLSIDE BETWEEN OAK FLAT & OAK GROVE CANYON, EAST OF PRATT CANYON.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY.

Threat: GRAZED BY CATTLE.

General: FIELD VERIFIED 1988. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 79 **Map Index:** 00766 **EO Index:** 28767

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing

Quad Summary: La Liebre Ranch (3411876/188C), Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.74608º / -118.67092º
UTM: Zone-11 N3846156 E347048
Radius: 1 mile
Elevation: 3,680 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 17W
Section: XX **Qtr:** XX
Meridian: S

Location: SAN ANDREAS RIFT ZONE, VICINITY OF RANCHO CORONA DEL VALLE.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA OVER CHRYSOTHAMNUS NAUSEOSUS AND/OR GRASS ACCORDING TO WIESLANDER SURVEY. QUERCUS LOBATA <15%, C. NAUSEOSUS >40%.

Threat: SITE HEAVILY GRAZED.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 80 **Map Index:** 00838 **EO Index:** 15109

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72713º / -118.63416º
UTM: Zone-11 N3843999 E350379
Area: 58.9 acres
Elevation: 4,280 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 07N
Range: 17W
Section: 01 **Qtr:** XX
Meridian: S

Location: RICHARDSON CANYON, NEAR PINE GROVE RANCH.

Location Detail: HOLLAND, 1988 SAW SAME PLANT ASSEMBLAGE BUT MODIFIED BOUNDARY CONSIDERABLY.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA ACCORDING TO WIESLANDER SURVEY.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Valley Oak Woodland

Element Code: CTT71130CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G3
State: S2.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 81 **Map Index:** 00817 **EO Index:** 15108

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Liebre Mtn. (3411866/163B)
County Summary: Los Angeles

Lat/Long: 34.72925º / -118.64631º
UTM: Zone-11 N3844252 E349271
Area: 36.4 acres
Elevation: 1,200 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 17W
Section: XX **Qtr:** XX
Meridian: S

Location: INTERMITTENT STREAM ASSOC W/ COW SPRING, SOUTH OF OAKDALE CANYON ROAD.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA AND PINUS SABINIANA OVER ARTEMISIA TRIDENTATA ACCORDING TO WIESLANDER SURVEY. OPEN CANOPY QUERCUS LOBATA W/SCATTERED PINUS SABINIANA PER HOLLAND, 1988.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-ANGELES NF

Occurrence No. 101 **Map Index:** 00690 **EO Index:** 13490

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Dates Last Seen
Element: 1988-04-01
Site: 1988-04-01
Record Last Updated: 1998-07-31

Quad Summary: Burnt Peak (3411865/163A)
County Summary: Los Angeles

Lat/Long: 34.71256º / -118.55870º
UTM: Zone-11 N3842273 E357264
Area: 84.9 acres
Elevation: 4,120 ft
Mapping PrecisionSPECIFIC
Symbol Type:POLYGON
Township: 08N
Range: 17W
Section: 32 **Qtr:** NW
Meridian: S

Location: VICINITY OF QUAIL LAKE FIRE STATION, EAST OF BALD MOUNTAIN.

Ecological: OPEN WOODLAND OF QUERCUS LOBATA WITH SCATTERED PINUS SABINIANA WITH GRASS UNDERSTORY ACCORDING TO WIESLANDER SURVEY, 1935 AND HOLLAND, 1988.

Threat: GRAZED BY CATTLE, 1988.

General: APPEARS TO BE PARTLY AN INHOLDING W/IN ANGELES NATIONAL FOREST. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Wildflower Field

Element Code: CTT42300CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 1 **Map Index:** 01580 **EO Index:** 13322

Dates Last Seen
Element: 1980-04-25
Site: 1980-04-25

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 1998-07-14

Quad Summary: Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.71331º / -118.41674º
UTM: Zone-11 N3842164 E370266
Radius: 1/5 mile
Elevation: 2,950 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 07N
Range: 15W
Section: 12 **Qtr:** NE
Meridian: S

Location: SE OF FAIRMONT. SE OF JUNCTION OF CALIFORNIA AQUEDUCT AND AVENUE H.

Ecological: ESCHSCHOLZIA CALIFORNICA IN DENSE STANDS ON LEVEL TERRAIN. SLOPE 0.10%, ASPECT VARIOUS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: SOME OF THE AREA HAS BEEN PLOWED.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No. 2 **Map Index:** 01705 **EO Index:** 7494

Dates Last Seen
Element: 1980-04-XX
Site: 1980-04-XX

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown

Record Last Updated: 1998-07-14

Quad Summary: Del Sur (3411863/162A), Little Buttes (3411873/187D), Fairmont Butte (3411874/187C), Lake Hughes (3411864/162B)
County Summary: Los Angeles

Lat/Long: 34.74248º / -118.38175º
UTM: Zone-11 N3845355 E373514
Radius: 1 mile
Elevation: 2,880 ft
Mapping PrecisionNON-SPECIFIC
Symbol Type:POINT
Township: 08N
Range: 14W
Section: 32 **Qtr:** NE
Meridian: S

Location: ANTELOPE VALLEY CA POPPY RESERVE. 2 MILES EAST OF FAIRMONT ON LANCASTER AVE; ANTELOPE BUTTES.

Location Detail: MAPPED AS GENERAL DUE TO SIZE.

Ecological: IN FLATS AT BASE OF BUTTES. SLOPE 0-5%. SANDY-GRAVELLY SOIL. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

Threat: ADJ LAND IRRIGATED, BARLEY/ALFALFA. CA AQUEDUCT NEARBY.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DPR-ANTELOPE VALLEY CA POP RES

Appendix E
List of Plant Species Observed, 2011

List of Plants Observed During Botanical Survey

Family	Scientific Name	Common Name	Note*
Gymnosperms			
Cupressaceae	*Juniperus californica*	California juniper	N
Dicots			
Asteraceae	*Chaenactis fremontii*	Desert pincushion	N
	Ericameria nauseosus	Rubber rabbitbrush	N
	Ericameria linearifolia	Interior goldenbush	N
	Rafinesquia neomexicana	Desert chicory	N
	Lasthenia californica	Goldfields	N
	Malacothrix glabrata	Desert dandelion	N
Boraginaceae	*Amsinckia menziesii var. menziesii*	Rancher's fireweed	N
	Amsinckia tessellata	Bristly fiddleneck	I
	Cryptantha angustifolia	Panamint catseye	N
	Cryptantha micrantha	Purpleroot cryptantha	N
	Pectocarya recurvata	Curvenut colmbsead	N
Brassicaceae	*Sisymbrium altissimum*	Tumble mustard	I
	Sisymbrium irio	London rocket	I
Chenopodiaceae	*Salsola tragus*	Russian thistle	I
Euphorbiaceae	*Chamaesyce albomarginata*	Rattlesnake weed	N
Fabaceae	*Astragalus douglasii*	Douglas milkvetch	N
	Lupinus microcarpus	Chick lupine	N
	Lupinus sp.	Lupine sp.	N
Geraniaceae	*Erodium botrys*	Longbeak stork's bill	I
	Erodium cicutarium	Filaree	I
Onagraceae	*Camissonia subacaulis*	Long-leaved evening primrose	N
	Oenothera deltoides	Dune evening primrose	N
Papaveraceae	*Eschscholzia californica*	California poppy	N
Polygonaceae	*Eriogonum sp.*	Wild buckwheat	N
	Eriogonum maculatum	Spotted buckwheat	N

List of Plants Observed During Botanical Survey

Family	Scientific Name	Common Name	Note*
Monocots			
Liliaceae	*Dichelostemma capitatum*	blue dicks	N
	Yucca brevifolia	Joshua tree	N
Poaceae	*Avena fatua*	Wild oat	N
	Bromus diandrus	Rip-gut brome	I
	Bromus rubens	Red brome	I
	Bromus tectorum	Cheatgrass	I
	Hordeum jubatum	Foxtail barley	I
	Hordeum murinum ssp. leporinum	Barley	I
	Poaceae sp.	Poaceae sp.	--

Notes:

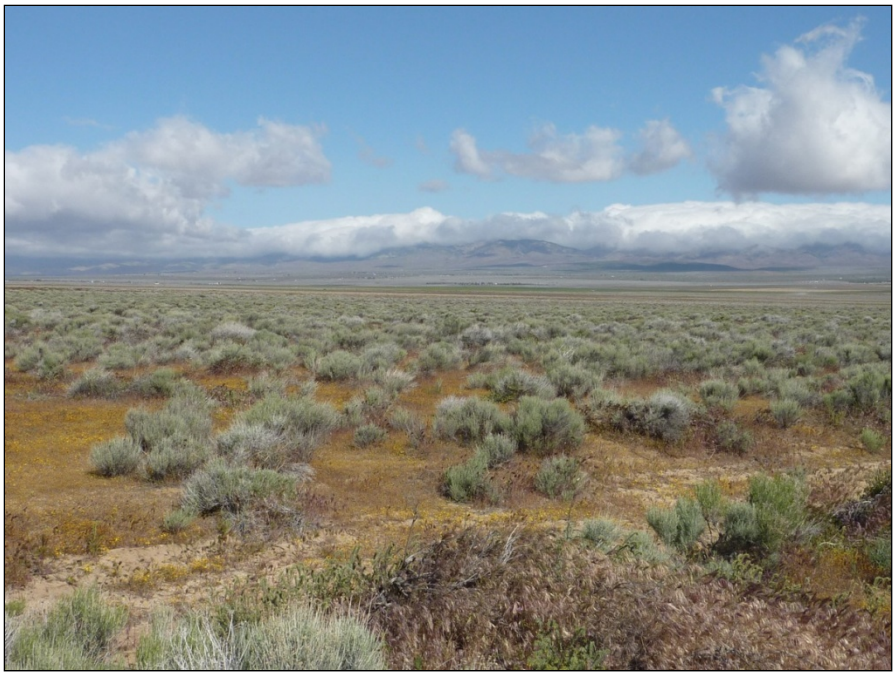
N = Native

I = Introduced

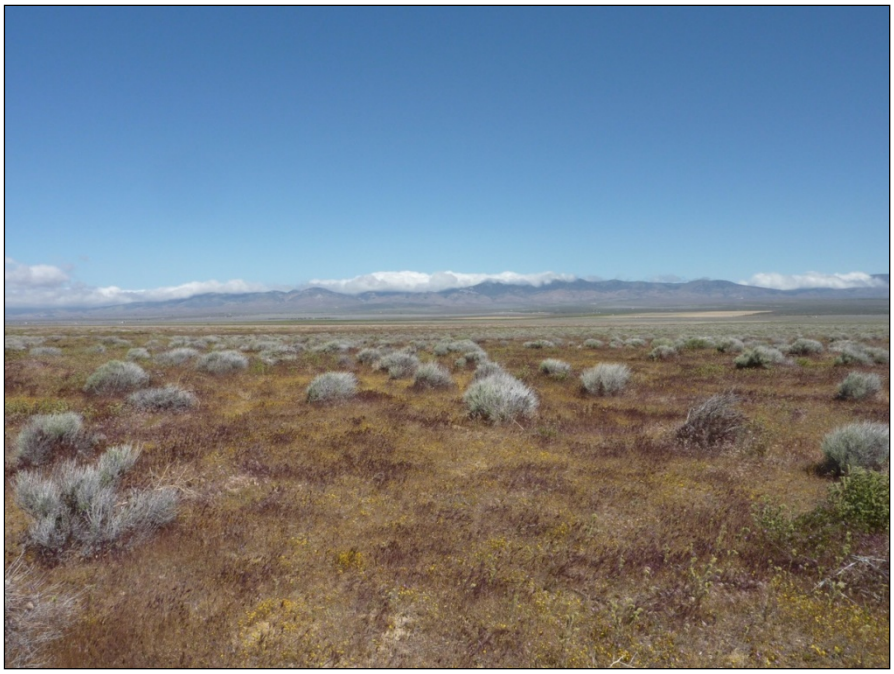
-- = Could not be determined

Appendix F
Representative Site Photographs

Small mammal burrow.



View looking northwest at rabbitbrush scrub in the eastern portions of the site.



View looking north from the western side of the site.

Herbaceous cover in the central-western area of the site.

View looking northeast at non-native grassland and ruderal habitat in the western portion of the site.

View looking north at non-native grassland and ruderal habitat in the western portion of the site.

Appendix G
List of Wildlife Species Observed, 2011

List of Wildlife Observed

	Scientific Name	Common Name
Birds		
	CATHARTIDAE	**NEW WORLD VULTURES**
	Cathartes aura	turkey vulture
	COLUMBIDAE	**PIGEONS & DOVES**
	Zenaida macroura	mourning dove
	ALAUDIDAE	**LARKS**
	Eremophila alpestris	California horned lark
	HIRUNDINIDAE	**SWALLOWS**
	Petrochelidon pyrrhonota	cliff swallow
	CORVIDAE	**JAYS & CROWS**
	Corvus corax	common raven
	LANIIDAE	**SHRIKES**
	Lanius ludovicianus	loggerhead shrike
	ICTERIDAE	**BLACKBIRDS**
	Agelaius phoeniceus	red-winged blackbird
	Sturnella neglecta	western meadowlark
	EMBERIZIDAE	**EMBERIZIDS**
	Amphispiza belli	sage sparrow
	ACCIPITRIDAE	**HAWKS, EAGLES**
	Aquila chrysaetos	golden eagle
Mammals		
	SCIURIDAE	**SQUIRRELS**
	Ammospermophilus leucurus	white-tailed antelope squirrel

Appendix D
Mitigation and Monitoring Program

MITIGATION MONITORING PROGRAM

The Department of Regional Planning staff has determined the following conditions or changes in the project are necessary in order to assure there will be no substantial evidence the proposed project will have a significant effect on the environment.

The applicant shall deposit the sum of $6,000 with the Department of Regional Planning (DRP) within 30 days of permit approval in order to defray the cost of reviewing and verifying the information contained in the annual reports or as required by this Mitigation Monitoring Program.

#	*Mitigation*	*Action Required*	*When Monitoring to Occur*	*Responsible Agency or Party*	*Monitoring Agency or Party*
Geotechnical					
	Submit a Geotechnical / Soils Report addressing both the proposed Project and the ASP to the Los Angeles County Department of Public Works for review and approval.	Submit Geotechnical/Soils report for review and approval	Prior to the issuance of grading permit	Applicant	DPW
	Construction activities will be conducted in accordance with a SWPPP addressing both the proposed Project and the ASP, which will be completed and available onsite at all times during construction and will incorporate industry standard BMPs for erosion and dust control. BMPs will be installed, as appropriate, prior to the start of ground disturbance and will be maintained throughout Project construction.	Submit detailed liquefaction and seismic stability analysis for review and approval	Prior to issuance of grading permit	Applicant	DPW
Flood					
	A final Hydrology and Hydraulics Report addressing both the proposed Project and the ASP will be prepared that includes recommendations to address potential design and flood constraints. The final report will be provided to the Department of Public Works prior to issuance of grading permits for the Project. The design features included in the final report will be implemented.	Submit Hydrology/ Hydraulics report for review and approval	Prior to issuance of grading permit	Applicant	DPW

#	Mitigation	Action Required	When Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
Fire					
	Prepare a Fire Protection and Prevention Plan that addresses both the proposed Project and the ASP and submit it to the LACFD for review and approval prior to issuance of a grading permit.	Submit a Fire Protection and Prevention Plan for review and approval	Prior to issuance of grading permit	Applicant	Fire Department DRP
Noise					
	Construction equipment and vehicles will be fitted with efficient and well-maintained mufflers to reduce noise emission levels. In addition, the Project construction equipment and vehicles will be maintained according to manufacturers' instructions and recommendations.	Submit a copy of approved Building Plans	Field verification during all phases of construction	Applicant	DPW DRP
Air Quality					
	Prepare and submit a Dust Control Plan addressing both the proposed Project and the ASP.	Submit a Dust Control Plan for review and approval	Prior to issuance of grading permit	Applicant	AVAQMD DRP
	The construction contractor will ensure that all mechanical equipment associated with Project construction is properly tuned and maintained in accordance with the manufacturers' specifications.	Submit a copy of approved Building Plans	Field verification during all phases of construction	Applicant Contractor	AVAQMD DRP
	Engine idle time will be restricted to no more than 5 minutes as required by the California Air Resources Board engine-idling regulation. Exceptions in the regulation include vehicles that need to idle as part of their operation, such as concrete mixer trucks.	Submit a copy of approved Building Plans	Field verification during all phases of construction	Applicant Contractor	AVAQMD DRP
	Any off-road stationary and portable gasoline-powered equipment brought onsite for construction activities will have U.S. Environmental Protection Agency (EPA) Phase 1/Phase 2 compliant engines.	Submit engine documentation for review and approval	Prior to issuance of grading permit	Applicant Contractor	AVAQMD DRP

#	Mitigation	Action Required	When Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
Biota					
	Pre-construction surveys will be conducted for nesting birds. If necessary, construction plans will be developed to avoid nesting periods.	Consult with the Department of Fish and Game	Prior to issuance of a grading permit	Applicant Contractor	DRP Department of Fish and Game
	Pre-construction clearance surveys will be conducted for ground-dwelling special-status species, including coast horned lizard, to ensure that these species are excluded from the impact zone during construction.	Consult with the Department of Fish and Game	Prior to issuance of a grading permit	Applicant Contractor	DRP Department of Fish and Game

#	Mitigation	Action Required	When Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
Cultural Resources					
	If cultural resources or materials are discovered during ground-disturbing activities, work near the discovery should cease and the area should be protected until the find can be evaluated by a qualified archaeologist. Depending on the nature of the find, additional consultation with the State Historic Preservation Office or with Tribal leaders may be necessary before work can resume in the area of the find.	Halt work if cultural resources are discovered	During construction	Applicant Contractor	South Central Coastal Information Center DRP
	If human remains are encountered, according to State Health and Safety Code Section 7050, no further disturbance will occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98.	Halt work if cultural resources are discovered	During construction	Applicant Contractor	County Coroner DRP
	Prior to construction, the Applicant will retain a qualified paleontologist to design and implement a mitigation program where excavations deeper than 6 feet would occur.	Submit grading plans for review and approval	Prior to start of grading activities	Applicant	DPW DRP
	Prior to ground disturbance, all construction personnel will be given awareness training, which will include instruction in both verbal and written forms that cultural or paleontological resources may be encountered during construction.	Provide worker awareness training	Prior to start of grading activities	Applicant Contractor	DRP

#	Mitigation	Action Required	When Monitoring to Occur	Responsible Agency or Party	Monitoring Agency or Party
Traffic					
	Prepare a Construction Traffic Control Plan addressing both the proposed Project and the ASP, and will submit the Plan to the County and Caltrans for review and approval prior to starting construction. The Plan will include flagging, safety measures, signage, and other related measures to protect the traveling public and construction workforce.	Submit a Traffic Control Plan	Prior to start of grading activities	Applicant Contractor	DPW DRP

As the applicant, I agree to incorporate these changes/conditions into the project and understand that the public hearing and consideration by the Hearing Officer and/or Regional Planning Commission will be on the project as changed/conditioned.

_____ _____

Applicant Date

☐ No response within 10 days. Environmental determination requires that these changes/conditions be included in the project.

_____ _____

Staff Date