

Comprehensive Biological Technical Report

High Desert Solar Project: 2017-2018 Survey Results

San Bernardino County, California

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FINAL



ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full-service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, and construction monitoring and reporting.

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Appendix I – Incidental Desert Kit Fox Observations

1.0 INTRODUCTION

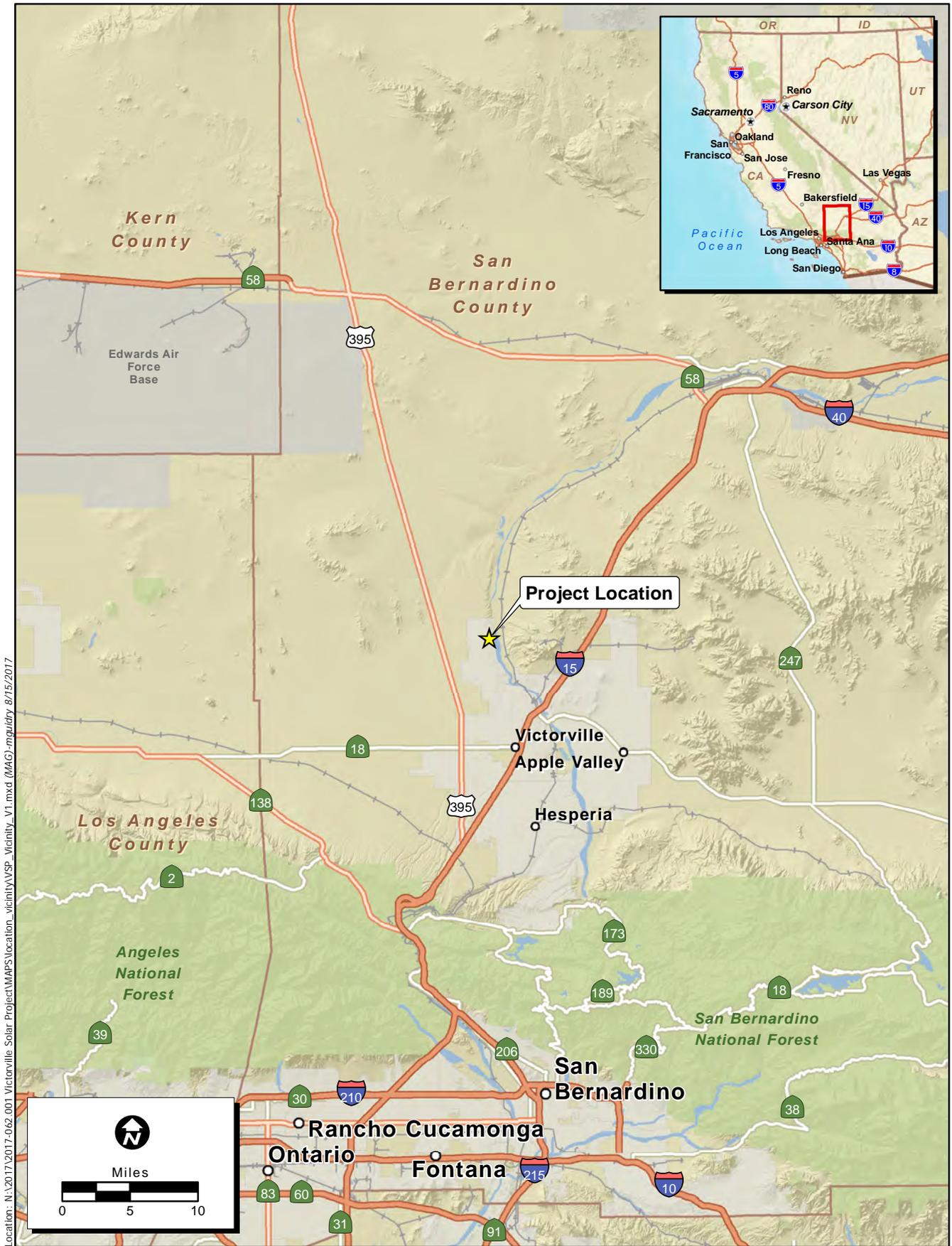
The High Desert Solar Project (HDSP or project) will be a nominal 108-megawatt (MW_{AC}) solar photovoltaic (PV) power facility and related substation with a proposed integrated battery energy storage system (BESS) located in the City of Victorville, San Bernardino County, California. The HDSP will provide renewable energy and critically needed flexibility attributes needed to advance California's Renewable Portfolio Standard (RPS) goals, climate policies, and to enhance electrical grid reliability. In support of the environmental review process for the project, ECORP Consulting, Inc. (ECORP) completed focused biological surveys for the project, the results of which are discussed in this report.

1.1 Project Location

The project is located in the City of Victorville, in Township 6 North, Range 5 West of the San Bernardino Meridian, in San Bernardino County, California. The project is located on the Victorville NW, Helendale, and Victorville United States Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1). Elevations across the project range from 2,654 to 2,854 feet above mean sea level (msl). The project would be located mostly east of Helendale Road and west of Floreate Road directly north of the Southern California Logistics Airport (SCLA) and east of the Victor Valley Wastewater Reclamation Authority (VWVRA) properties (Figure 2).

1.2 Project Description

The project will be developed on a total of approximately 614 acres consisting of an approximately 579-acre solar PV field, BESS, substation, and balance of system, collectively referred to as the Solar Field Area, and an approximately 35-acre corridor consisting of a 2.3-mile 230-kV generation tie (Gen-Tie) line that will run east and then south to connect to the existing Victor-Caldwell 230-kV line, upstream of the first pole on the Southern California Edison system. Additionally, a 1.7-mile 12.47-kV service line will connect to the Victorville Municipal Utility Services (VMUS) system. This line will run as underbuilt with the 230-kV line for the first mile and then diverge to the west and run on standard distribution utility poles to connect to VMUS at the VWVRA south of the Solar Field Area. The Gen-Tie line and service line are collectively referred to as the Interconnection Facilities. The Interconnection Facilities will be located within linear corridors, 120 feet and 40 feet wide respectively, and cover a total area of approximately 35 acres.



Location: N:\2017\2017-062_001_Victorville_Solar_Project\MAPS\Location_vicinity\VSP_vicinity_V1.mxd (MAG) m.gaidry 8/15/2017

Map Date: 8/8/2017
 Service Layer Credits: Sources: USGS, ESRI, TANA, AND

Figure 1. Project Vicinity

2017-062 Victorville Solar Project

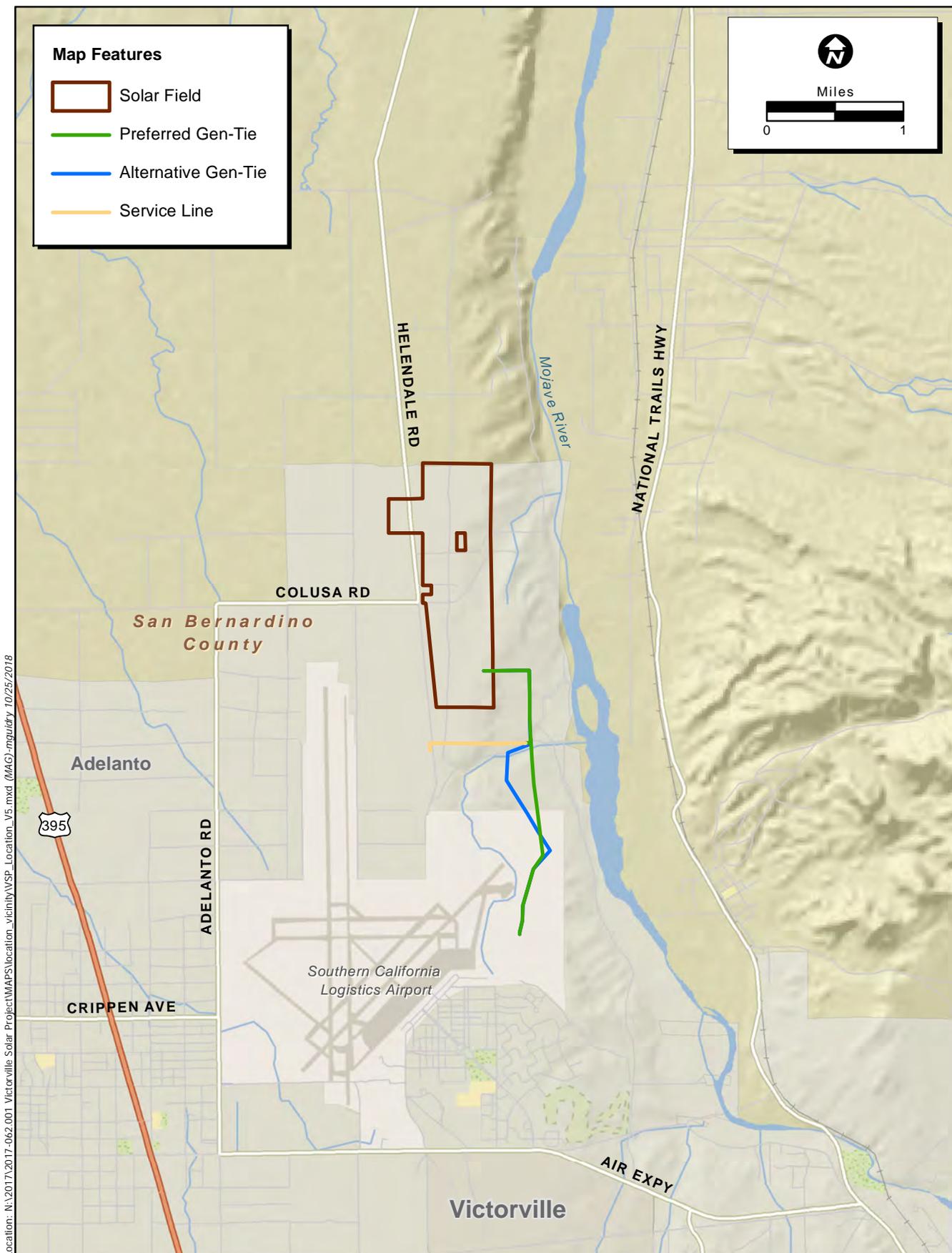


Figure 2. Project Location

2017-062 Victorville Solar Project

1.3 Purpose and Objectives

In preparation for the development of the project, ECORP conducted the following studies in 2017 and 2018:

- Literature review
- Biological reconnaissance survey
- Mohave ground squirrel (*Xerospermophilus mohavensis*) habitat assessment
- Focused, protocol-level surveys for special-status plant species (spring 2017 and 2018) and special-status plant habitat assessment (fall 2018)
- Protocol surveys for desert tortoise (*Gopherus agassizii*)
- Focused surveys for burrowing owl (*Athene cunicularia*) (spring and summer 2017 and 2018) and burrowing owl habitat assessment and burrow survey (fall 2018).

The results of these studies are discussed in this report.

A jurisdictional delineation was conducted at the site during a separate field survey effort, the results of which are presented under a separate cover (ECORP 2018a).

1.4 Project Survey Area Background

An initial project design was surveyed in 2017. Additions to the project occurred and access to private properties was granted while surveys were taking place in 2017, and these additional areas were subsequently included in the remainder of the 2017 surveys. In early 2018, further additions to the project were made and the same suite of surveys that were conducted in 2017 were conducted in the additional project in 2018.

In 2018, after the completion of the 2018 focused surveys in the spring and summer months, an additional 49-acre portion of property, already under the applicant's control, was added to the project and refinements to the project that established a Preferred Gen-Tie Line alignment were made. The new Gen-Tie Line alignment areas were either already covered by the survey buffers or fell into the VVWRA facility boundaries where suitable habitat is not present. However, portions of the 49-acre addition fell outside of previously surveyed areas, and a survey of the additional 49 acres plus appropriately sized buffers was conducted in fall of 2018. The fall 2018 survey was within the accepted protocol survey period for desert tortoise but fell outside of the accepted protocol time periods for special-status plants (outside of appropriate blooming periods) and burrowing owl (outside of breeding season). Therefore, a special-status plant habitat assessment and a burrowing owl habitat assessment and burrow survey were conducted for the additional 49-acre property concurrently with the desert tortoise survey to assess the potential for the presence of these special-status species on the previously un-surveyed portions.

There are two proposed project alternatives being considered related to alternative alignments for the Gen-Tie: Project Boundary with Preferred Gen-Tie Line Alignment and Project Boundary with Alternative Gen-Tie Line Alignment. Hereafter, the term "project boundary" refers to any area that falls on or within

the boundaries for the Solar Field Area and either the Preferred or the Alternative Gen-Tie Line alignments.

This document presents the results of the biological surveys that were conducted for the project according to project boundaries that were current at the time the surveys were conducted. It is important to note that a final project design was decided upon after biological surveys had been conducted for the site. The final project design and an analysis of project-related impacts to sensitive biological resources within the final project design are reported under a separate cover (ECORP 2018b).

2.0 REGULATORY REQUIREMENTS

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and animals that are listed as endangered or threatened by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of FESA prohibits the taking of endangered wildlife, where taking is defined as "*harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct*" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 USC 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of FESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

In December of 2017, the U.S. Department of the Interior's Office of the Solicitor issued Memorandum M-37050 (Opinion) that altered the interpretation of "Incidental Take" under the MBTA. The Opinion states

that the MBTA only prohibits the intentional take or killing of migratory birds. This is a reversal of the Solicitor's Opinion M-37041 issued a year prior, which interpreted the MBTA as prohibiting both the intentional and incidental take of migratory birds. In April of 2018 the USFWS issued a guidance memorandum affirming the Opinion, and that MBTA's take prohibitions only apply to the direct intentional take of migratory birds, eggs, and nests. The memorandum also states the USFWS will no longer seek penalties or enforcement for incidental take of migratory birds under the MBTA. However, the highly political nature of interpretation of "take" under the MBTA and the recent swift reversals of opinion (and potential reversals in the everchanging political atmosphere) highlight that it is in the best interest of project developers to continue to actively avoid incidental project impacts to migratory birds and to document the minimization, mitigation, and avoidance measures taken to reduce impacts on migratory birds.

2.1.3 Federal Clean Water Act

Building from the Rivers and Harbors Act of 1899, which primarily pertains to discharge of fill into navigable waters, the federal Clean Water Act's (CWA) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA regulates the discharge of dredged or fill material into "Waters of the United States" through the U.S. Army Corps of Engineers (USACE) via a general or nationwide permit. The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (EPA) acts as a cooperating agency to set policy, guidance and criteria for use in evaluation permit applications and also reviews USACE permit applications.

The USACE regulates "fill" or dredging of fill material within its jurisdictional features. "Fill material" means any material used for the primary purpose of replacing an aquatic area with dry land or changing the bottom elevation of a water body. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required in conjunction with any Section 404 permit actions; this certification or waiver is issued by the State Water Resources Control Board (SWRCB), administered by each of nine California Regional Water Quality Control Boards (RWQCBs). For this project, the Lahontan RWQCB has jurisdiction. A jurisdictional delineation was conducted at the site during a separate field survey effort, the results of which are under a separate cover (ECORP 2018a).

2.2 State and Local Regulations

2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA but, unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called "candidates" by the state). Section 2080 of the California Fish and Game Code prohibits the taking,

possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as *"hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."* CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with California Department of Fish and Wildlife (CDFW) to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (Fish and Game Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

2.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (Fish and Game Code Sections 1900-1913) was created with the intent to *"preserve, protect and enhance rare and endangered plants in this State."* The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. The CESA of 1984 (Fish and Game Code Section 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.4 California Desert Native Plants Act

The California Desert Native Plants Act (1981; Division 23 of the California Food and Agriculture Code, Sections 80001-90201) protects several species of native desert plants, including all species of the families Agavaceae (yuccas) and Cactaceae (cacti). The intent of the California Desert Native Plants Act is *"to protect California desert native plants from unlawful harvesting on both public and privately-owned lands"* and *"to provide the people of this state with the information necessary to legally harvest native plants so as to ultimately transplant those plants with the greatest possible chance of survival"*.

2.2.5 California Fish and Game Code

Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for *"any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake."* The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is

the Streambed Alteration Agreement. Often, projects that require a Streambed Alteration Agreement also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap. A jurisdictional delineation was conducted at the site during a separate field survey effort, the results of which are under a separate cover (ECORP 2018a).

Migratory Birds

CDFW enforces the protection of non-game native birds in Sections 3503, 3503.5, and 3800 of the California Fish and Game Code. Section 3513 of the California Fish and Game Code prohibits the possession or take of birds listed under the MBTA. These sections mandate the protection of California non-game native birds' nests and make it unlawful to take these birds. All raptor species are protected from "take" pursuant to California Fish and Game Code Section 3503.5 and are also protected at the federal level by the MBTA of 1918.

2.2.6 City of Victorville Joshua Tree Ordinance

The City of Victorville (City) has a Joshua tree (*Yucca brevifolia*) protection ordinance that protects Joshua trees on undeveloped land (Ordinance Number 1224; Municipal Code Chapter 13.33). If a project will result in impacts to any Joshua trees on site, then approval must be obtained from the City prior to removal of the trees. Prior to seeking City approval, a Joshua tree inventory will need to be conducted to document the size, location, and general health of all Joshua trees that will be affected by the project. The Joshua trees must either be transplanted to another area on site, transplanted off site, or placed for adoption.

2.2.7 CEQA Significance Criteria

Section 15064.7 of the California Environmental Quality Act (CEQA) Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. The Appendix G "checklist" is a screening tool used to determine whether potential impact to biological resources may be significant:

- 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 CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether an impact on biological resources would be significant must consider both the resource itself and how that resource fits into a regional or local context. Significant impacts may result where the project would not avoid or minimize impacts to biological resources. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that, although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of an important resource on a population-wide or region-wide basis.

3.0 METHODOLOGY

3.1 Literature Review

Prior to conducting the biological reconnaissance survey, ECORP biologists performed a literature search to determine the special-status species that have been documented in the areas depicted on the Helendale, Victorville, Victorville NW, and surrounding (Shadow Mountains, Red Buttes, Astley Rancho, Wild Crossing, Hodge, Turtle Valley, Apple Valley North, Apple Valley South, Hesperia, Baldy Mesa, Adelanto, and Shadow Mountains SE) USGS 7.5-minute topographic quadrangles. This literature search included the CDFW California Natural Diversity Database (CNDDDB; CDFW 2018a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPSEI; CNPS 2018). Additional information was gathered from the following resources:

- CDFW CNDDDB Special Animals List (CDFW 2018b);
- California Natural Diversity Database Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2018c);
- *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012);
- Documents published by the regulatory agencies and other scientific literature;
- Biological technical reports authored for previous proposed projects on or near the project; and
- Various online websites (e.g., Calflora 2018).

Biological surveys were conducted in 2006 and 2007 within a smaller area within the current project boundaries for the Victorville 2 Hybrid Power Project (VV2 Project) by AMEC Earth & Environmental, Inc. The report documenting the results of these surveys was reviewed as part of the literature review conducted for the project (AMEC 2007). The 2007 Biological Resources Technical Report for the VV2 Project is included in Appendix A.

Using this information and observations in the field, a list of special-status plant and wildlife species that have the potential to occur within the project boundaries was generated. For the purposes of this assessment, special-status species are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the CESA or FESA;
- Are candidate species being considered or proposed for listing under these same acts;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; and/or
- Are of expressed concern to resource and regulatory agencies, or local jurisdictions.

Sensitive species reported for the region in the literature search or for which suitable habitat occurs in the project boundaries were assessed for potential to occur within the area based on the following guidelines:

- Present:** Species (or its sign) was observed within the project boundaries during a site visit or focused survey. Includes species for which sign was observed but species itself was not.
- High:** Habitat (including soils and elevation factors) for the species occurs within the project boundaries and a known occurrence has recently been recorded (within the last 20 years) within five miles of the area.
- Moderate:** Habitat (including soils and elevation factors) for the species occurs within the project boundaries and a documented observation occurs within the database search, but not within five miles of the area; a historic documented observation (more than 20 years old) was recorded within five miles of the project boundaries; or a recently documented observation occurs within five miles of the area and marginal or limited amounts of habitat occurs in the project boundaries.
- Low:** Limited or marginal habitat for the species occurs within the project boundaries and a recently documented observation occurs within the database search, but not within 5 miles of the area; a historic documented observation (more than 20 years old) was recorded within five miles of the project boundaries; or suitable habitat strongly associated with the species occurs on site, but no records or only historic records were found within the database search.
- Presumed Absent:** Species was not observed during focused survey(s) conducted in accordance with protocol guidelines at an appropriate time for identification; habitat (including soils and elevation factors) does not exist on site; or the known geographic range of the species does not include the project boundaries.

Note that location information on some special-status species may be of questionable accuracy or unavailable; therefore, for survey purposes, environmental factors associated with species occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence.

Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife nomenclature follows the Society for the Study of Amphibians and Reptiles (SSAR 2017), the

Checklist of North American Birds (American Ornithologists' Union [AOU] 2016), and the Revised Checklist of North American Mammals North of Mexico (Bradley et al. 2014).

3.2 Biological Reconnaissance Survey

A biological reconnaissance survey was performed within the entire project boundaries (comprising the Solar Field Area, Preferred Gen-Tie Alignment, and Alternative Gen-Tie Alignment, as defined in Section 1.4) so that 100-percent visual coverage of the area within the project boundaries and surrounding vicinity was achieved. The reconnaissance survey included the following:

- Recording plant and wildlife species observed in the project boundaries and in immediately adjacent areas;
- Characterizing and mapping vegetation communities present in the project boundaries;
- Searching for animal sign (e.g., detections of burrows, scat, tracks, vocalizations);
- Taking representative photographs; and
- Recording weather data including time, temperature, cloud cover, and wind speed at the beginning and end of the survey.

Vegetation mapping was completed concurrently with the biological reconnaissance surveys, using pedestrian surveys and assessments from key vantage points to characterize and map the vegetation communities and to identify any sensitive habitats within the project boundaries. The boundaries of the vegetation communities were drawn on field maps by hand and were then digitized into GIS to create the vegetation maps. Vegetation communities were characterized following the designations in Sawyer et al. (2009) and Holland (1986). Plant species not recognized in the field were collected and identified using botanical references (e.g., Baldwin et al. 2012).

3.3 Mohave Ground Squirrel Habitat Assessment

Concurrent with the biological reconnaissance survey, an ECORP biologist who holds Memorandum of Understanding (MOU) with CDFW for performing Mohave ground squirrel studies conducted the Mohave ground squirrel habitat suitability assessment for the project. The Mohave ground squirrel's most active period above ground is between March and April, which is optimal for conducting a Mohave ground squirrel habitat assessment, as designated in the *Mohave Ground Squirrel Survey Guidelines* (CDFW 2010). The *Mohave Ground Squirrel Survey Guidelines* states that "since the limits of the geographic range are not known precisely, surveys may be required in areas up to five miles from currently-documented boundaries." The project is located within the currently documented geographic range of the Mohave ground squirrel and was subsequently assessed for its ability to support the species. The assessment was conducted within the project boundaries (comprising the Solar Field Area, Preferred Gen-Tie Alignment, and Alternative Gen-Tie Alignment, as defined in Section 1.4) as shown on shapefiles provided by the project proponent.

In addition to using the currently documented Mohave ground squirrel range boundaries, the biologist determined habitat suitability based on the natural history and habitat requirements of the Mohave

ground squirrel. The biologist used a combination of stopping along existing access roads and surveying areas on foot to characterize and map the suitable habitat for Mohave ground squirrel within the project boundaries.

Photographs were taken during the survey to provide visual representation of the various vegetation communities within the project boundaries. The coordinates of each photo-point location were recorded using a Global Positioning System (GPS) device. After performing the habitat assessment on the site, the total acreages of any suitable and unsuitable Mohave ground squirrel habitat within the project boundaries were calculated. The results of the Mohave ground squirrel habitat assessment are presented in Section 4.3.

3.4 Focused and Protocol Surveys

The need for focused and protocol surveys was determined based on the results of the literature search and biological reconnaissance survey.

The project boundaries (comprising the Solar Field Area, Preferred Gen-Tie Alignment, and Alternative Gen-Tie Alignment, as defined in Section 1.4) and an appropriately-sized buffer were surveyed for sensitive biological resources in 2017 and 2018. A different survey buffer size was established for each focused survey based on the ecological requirements of the targeted special-status species: 100-foot buffer for special-status plants, 300-foot buffer for desert tortoise, and 500-foot buffer for burrowing owl. The only areas where the buffer was not surveyed was where it overlapped with private property and survey access was not granted, or within the VVWRA facility where suitable habitat does not exist. Figures showing each respective survey area are included in the survey results section (Figures 3, 4, 9, 11, 12, 13, and 17).

3.4.1 Special-Status Plants

Special-status plant species are those that are federally or state-listed as threatened or endangered under FESA and/or CESA, are considered rare by CNPS, and/or are regulated by state laws and policies of local jurisdictions. Based on the results of the literature review and biological reconnaissance survey, a list of special-status plants was compiled and analyzed for their potential to occur in the project boundaries. Known reference populations of these plants were visited prior to and during the surveys to verify blooming status.

Reference Population Assessments

In an attempt to verify the blooming status of target special-status plant species, five reference locations were visited where target special-status plant species were previously recorded (according to the CNDDDB). All reference populations were located within a 10-mile radius of the project boundaries and included Beaver Dam breadroot (*Pediomelum castoreum*), Mojave monkeyflower (*Diplacus mohavensis*), and Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*).

Focused Special-Status Plant Surveys

A total of four focused special-status plant surveys were conducted within the project boundaries and a 100-foot buffer in April and May during 2017 and 2018. April and May surveys were based on the expected blooming periods of the target plant species. Surveys were conducted by biologists with extensive experience in botanical surveys and knowledge regarding plant taxonomy, plant species in the region, and special-status plant species. The purpose of the surveys was to determine the presence or absence, number of individuals, and acreages of special-status plant species within the project boundaries and a 100-foot buffer (Special-Status Plant Survey Area).

Survey methods were devised with consideration of the following resources:

- 1) *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996);
- 2) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2009); and
- 3) *CNPS Botanical Survey Guidelines* (CNPS 2001).

Four separate surveys were conducted for the project. The surveys were scheduled to coincide with the target species' blooming periods and during a period when target species were most likely identifiable. The Special-Status Plant Survey Area consisted of a 100-foot buffer around the project boundaries to determine whether special-status plants were present in the vicinity of the project. Some private lands located within the project boundaries were not surveyed due to access restrictions. However, whenever possible, inaccessible areas were surveyed using binoculars. Pedestrian-based survey transects were walked to provide 100-percent visual coverage of the Special-Status Plant Survey Area. For portions of the Special-Status Plant Survey Area that were heavily disturbed and developed (e.g., VVWRA, small areas of trash dumping, developed parcels) 100-percent coverage was determined to be unnecessary based on the low probability of special-status plants occurring in those areas and the safety of the survey crew (e.g., rubbish piles, wood piles with nails, slip/trip hazards). Sub-meter GPS devices were used during surveys to record the coordinates of any sensitive plant species observed. Biologists walked transects spaced approximately 30 feet apart, using GPS devices to track their paths. In some locations with historic disturbance and where visibility was high, an expanded transect spacing was used with a maximum transect width of 60 feet.

Common plant species were identified and recorded to maintain a compendium of plant species that occur in the Special-Status Plant Survey Area. In some cases, biologists took samples from the site so that a dissecting microscope could be used for plant identification. Taxonomy of plant species identified within the Special-Status Plant Survey Area is based on the following sources:

- *The Jepson Manual* (Hickman 1993)
- *The Jepson Desert Manual* (Baldwin et al. 2002)
- *The Jepson Manual, 2nd Ed.* (Baldwin et al. 2012)

The GPS data collected in the field were transferred from the GPS device to a computer, and differential correction post-processing was performed. The data were then viewed and analyzed for verification, edited, and converted to a Geographic Information System (GIS) format at the time of download.

Special-Status Plants Habitat Assessment – 49-Acre Project Addition

In October of 2018, a special-status plant habitat assessment was conducted within previously un-surveyed portions of the 49-acre area that was added to the project after the spring 2018 surveys were completed (hereafter Special-Status Plant Habitat Assessment Area). The purpose of the habitat assessment was to determine if the Special-Status Plant Habitat Assessment Area supported or had the potential to support special-status plants. These surveys were conducted outside of the appropriate blooming periods for any of the targeted special-status plants (generally April – August), therefore focused surveys could not be conducted. Although the surveys could not be considered focused protocol surveys, the same methods were used as described above to conduct the habitat assessment (i.e., pedestrian-based survey transects spaced 30-feet apart to provide 100-percent visual coverage of the Special-Status Plant Habitat Assessment Area.)

Cactus and Joshua Tree Inventory

In accordance with the City of Victorville (City) Municipal Code Title 13, Chapter 13.33, Ordinance Number 1224 (City 2018), desktop analysis and/or GPS data point collection was conducted to identify the locations and number of Joshua trees occurring in the Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area. The California Desert Native Plants Act (1981; Division 23 of the California Food and Agriculture Code, Sections 80001-90201) protects several species of native desert plants, including all species of cactus. Therefore, a desktop analysis and/or GPS point collection was also performed for all cactus species occurring in the Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area. It should be noted that a health assessment of each Joshua tree and cactus was not performed during these survey efforts. The purpose of the desktop assessment and GPS data point collection of Joshua tree and cactus species was to identify the numbers of these species present within the project boundaries to aid future planning efforts involving Joshua tree transplantation or adoption for compliance with the City's ordinance.

During the 2017 surveys, GPS data points were intermittently taken for Joshua trees. After the surveys were completed, the locations of the GPS data points taken for Joshua trees in the field were compared to images on aerial photography and an estimate of the number of Joshua trees within the area surveyed in 2017 was determined. Based on observations from the surveys, an estimate of all the cactus species occurring in the area surveyed in 2017 was also performed.

During the 2018 surveys, GPS data points were taken for all Joshua trees and cactus species encountered in the area surveyed in 2018 and the Special-Status Plant Habitat Assessment Area. The locations and numbers of Joshua trees and cactus species from the 2017 and 2018 survey efforts were combined to represent an approximate number of Joshua trees and cactus species present within the project boundaries that may need to be evaluated for future transplanting activities.

3.4.2 Desert Tortoise

Based on the results of the literature review and the biological reconnaissance survey, it was determined that low quality but suitable habitat for the desert tortoise was present within the project boundaries. Protocol desert tortoise surveys were conducted by within the project boundaries and a 300-foot buffer by biologists with extensive experience conducting surveys for desert tortoise. The survey was conducted in accordance with the recommended survey protocol methods in the USFWS document *Preparing for Any Action That May Occur within the Range of the Mojave Desert Tortoise (Gopherus agassizii)* (USFWS 2010). Methods used to conduct the survey are described below.

The Desert Tortoise Survey Area included the entire project boundary and a 300-foot buffer. The 49-acre addition to the project that was added in October 2018 was also included in the Desert Tortoise Survey Area. The biologists walked throughout the Desert Tortoise Survey Area using pedestrian transects spaced approximately 30 feet apart to provide 100-percent survey coverage. The biologists checked under shrubs and trees and visually inspected any burrows encountered for desert tortoise or desert tortoise sign. Some private lands located within the Desert Tortoise Survey Area were not surveyed on foot due to lack of access permissions. However, whenever possible, inaccessible areas were surveyed using binoculars. The biologists conducted surveys during atmospheric conditions most conducive to observing desert tortoise and avoided adverse conditions that might have inhibited tortoise activity, including high winds and temperature extremes (less than 50 degrees Fahrenheit [°F] and greater than 104°F). If encountered, desert tortoises or their sign (e.g., burrows, carcasses, scat, pellets, drinking sites, tracks, mating rings) were recorded using a GPS device. The date of observation, sign type, sign classification (according to the survey protocol), amount of sign, and any pertinent comments were recorded for any sign encountered. When feasible, photographs were taken of desert tortoises and representative desert tortoise sign.

The desert tortoise survey was conducted concurrently with the corresponding burrowing owl surveys for the project during each survey year. The methods used during these concurrent survey periods followed the desert tortoise survey methods, which require smaller transect spacing and do not have any time constraints. The burrowing owl survey methods, and deviations from the standard burrowing owl survey protocol, are described in more detail below.

3.4.3 Burrowing Owl

Focused Breeding Season Surveys

During the biological reconnaissance survey, it was determined that suitable habitat for burrowing owl was present throughout the areas within the project boundaries. Therefore, four focused presence/absence surveys for burrowing owl were conducted during the breeding season in 2017 and 2018 by biologists who have experience in the identification of burrowing owl habitat, behavior, sign, and vocalizations. The Burrowing Owl Survey Area included the area within the project boundaries and a 500-foot buffer. The surveys were conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012), with minor modifications made to combine survey efforts with the protocol desert tortoise survey, when appropriate. The methods used to conduct the surveys and the deviations from the standard protocol are described below.

The survey protocol recommends four breeding season surveys be conducted at least three weeks apart between April 15 and July 15. According to the protocol, the first survey is to occur between February 15 and April 15, the second and third surveys are to occur between April 16 and June 15, and the fourth and final survey should occur between June 16 and July 15. The surveys should be conducted when detection rates are highest and owls are most active: between morning civil twilight and 10:00 a.m., and two hours before sunset until evening civil twilight. The survey protocol recommends that temperatures during surveys should be greater than 68°F, with winds less than 7 miles per hour and cloud cover less than 75 percent (CDFW 2012).

The survey methodology used during some, but not all, of the focused burrowing owl surveys deviated somewhat from the CDFW protocol to accommodate the protocol desert tortoise surveys. During surveys conducted on April 4, 6, 10, 11, and 12, 2017, May 2 and 3, 2017, and May 14, 15, 16, and 17, 2018, focused burrowing owl survey efforts were combined with the protocol desert tortoise surveys (discussed in Section 3.4.2). During these surveys, biologists walked transects spaced 30 feet apart as opposed to the recommended 60-foot transect width in the burrowing owl survey protocol. This incidentally allowed for higher accuracy surveys for burrowing owl during the combined survey periods. During these combination survey periods, surveys were conducted past the recommended burrowing owl survey timeframe of 10:00 a.m., but were never conducted past 2:00 p.m. Other than the slight modifications to combine survey efforts when appropriate, all other aspects of the survey protocol specified in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) were followed.

All other focused burrowing owl surveys (i.e., those that were not combined with desert tortoise surveys) followed the survey protocol, including survey timing, as it is recommended in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Using a handheld GPS device for reference, biologists walked straight-line pedestrian survey transects, spaced no more than 60 feet apart throughout the entire Burrowing Owl Survey Area to provide 100-percent visual coverage. The biologists searched for burrowing owls, occupied burrows, and potential burrows. In accordance with the *CDFW Staff Report on Burrowing Owl Mitigation* (CDFW 2012), burrows were classified as "occupied" if burrowing owl sign (such as pellets, whitewash, bones of prey items, and feathers) was present, regardless of whether burrowing owls were observed at the burrow location. Burrows were classified as "potential" if the burrows were of suitable size, shape, and depth for a burrowing owl to occupy, but no sign was present. To clarify the results of the surveys, burrows were classified as "active and occupied" if live burrowing owl(s) were observed at an occupied burrow location at any point during the focused surveys.

During the surveys, all burrowing owl individuals, occupied burrows, and potential burrowing owl burrows were recorded with a handheld GPS device and recorded on data sheets. Weather conditions (temperature, cloud cover, and wind speed) were recorded at the start and end of each survey period. If weather conditions were unsuitable for detecting burrowing owls (e.g., extreme wind, rain, temperatures, etc.), surveys were stopped or postponed until conditions improved. Some private lands located within the Burrowing Owl Survey Area were not surveyed due to lack of access permissions. However, whenever possible, inaccessible areas were surveyed using binoculars.

To maximize the detection of burrowing owls and their sign, the transect lines that the surveyors walked varied in that transect lines were walked 30 feet offset from previous transect lines during surveys. This

method allowed the surveyors to survey a slightly different area than was surveyed previously and maximized the potential for detection of burrowing owl sign that may have been missed during previous surveys. Additionally, all burrows (occupied and potential) documented during previous surveys were evaluated again during subsequent surveys to determine if the burrow status had changed since the last survey (i.e., the presence of new burrowing owl sign). Care was taken where applicable to minimize disturbance near known occupied burrows so as not to disturb any burrowing owls present.

Burrowing Owl Habitat Assessment and Burrow Survey: 49-acre Project Addition

In October of 2018, a burrowing owl habitat assessment and burrow survey was conducted within previously un-surveyed areas of a 49-acre property that was added to the project after the 2018 burrowing owl breeding season surveys were completed (hereafter Burrowing Owl Habitat Assessment Area). The purpose of the burrowing owl habitat assessment and burrow survey was to determine if the Burrowing Owl Habitat Assessment Area supported or had the potential to support burrowing owl. This survey was conducted outside of the established breeding season survey timeframes for burrowing owl (April 15 to July 15); therefore, the survey could not be classified as a breeding season survey. Although the survey was conducted outside of the timeframe listed in the survey protocol, the same methods were used as described above to conduct the habitat assessment and burrow survey (i.e., pedestrian-based survey transects were walked to provide 100-percent visual coverage of the Burrowing Owl Habitat Assessment Area). The burrowing owl habitat assessment and burrow survey was conducted concurrently with desert tortoise protocol survey and transects were spaced 30 feet apart where the survey area overlapped with the Desert Tortoise Survey Area, and 60 feet apart in the burrowing owl buffer areas.

3.5 Incidental Sensitive Biological Resources

While conducting the biological reconnaissance survey, habitat assessments, and focused surveys, incidental observations or detections of special-status species were recorded. Attention was paid to federally and/or state-listed wildlife species. Locations of incidentally detected special-status species were recorded using a GPS device, and details on behavior, habitat, or other pertinent notes, if applicable, were recorded on data sheets.

4.0 RESULTS

Table 1 summarizes the surveys conducted for the project, the survey timing, and the areas that were covered during each survey.

Table 1. Project Survey Summary				
Survey	Area Surveyed	Dates	Survey Personnel	Survey Results Section
Biological Reconnaissance Survey	Project Boundaries*	March 23 and 24, 2017 April 18, 2018	Phillip Wasz† Kevin Cornell Phillip Wasz	Section 4.2 Figures 3 and 4
	49-Acre Project Addition	October 9, 2018	Phillip Wasz†	Section 4.2 Figures 3 and 4
Mohave Ground Squirrel Habitat Assessment	Project Boundaries	March 23 and 24, 2017 April 18, 2018	Phillip Wasz† Phillip Wasz†	Section 4.3 Figure 9
	49-Acre Project Addition	October 9, 2018	Phillip Wasz†	Section 4.3 Figure 9
Focused, Protocol-Level Special-Status Plant Survey	Special-Status Plant Survey Area (Project Boundaries and a 100-foot buffer)	April 11-14, 2017 May 15-19, 2017 April 3-6 and 10, 2018 May 8-11, 2018	Greg Hampton† Joshua Corona-Bennett† Jerry Aguirre Kevin Cornell Taylor Dee Kent Hughes Carley Lancaster Jon Renard Lauren (Dorough) Simpson Wendy Turner Ryan Villanueva	Section 4.4.1 Figures 11 and 12
Special-Status Plant Habitat Assessment	Special-Status Plant Habitat Assessment Area (49-Acre Project Addition and a 100-foot buffer)	October 9, 2018	Greg Hampton†	Section 4.4.1 Figures 11 and 12
Cactus and Joshua Tree Inventory	Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area	Concurrently with Focused, Protocol-Level Special-Status Plant Survey and Special-Status Plant Habitat Assessment	Greg Hampton†	Section 4.4.1 Table 9
Protocol Desert Tortoise Survey	Desert Tortoise Survey Area (Project Boundaries, 49-Acre Project Addition, and a 300-foot buffer)	April 6-7, 2017 April 10-12, 2017 May 2-3, 2017 May 14-17, 2018 October 9, 2018	Lauren (Dorough) Simpson† Jon Renard† Jerry Aguirre Kevin Cornell Taylor Dee Greg Hampton Torrey Rotellini Adam Schroeder Wendy Turner Phillip Wasz Brian Zitt	Section 4.4.2 Figure 14

Table 1. Project Survey Summary				
Survey	Area Surveyed	Dates	Survey Personnel	Survey Results Section
Focused Breeding Season Burrowing Owl Surveys	Burrowing Owl Survey Area (Project Boundaries and a 500-foot buffer)	<u>Survey #1 (2017)</u> April 6-7 April 10-12 <u>Survey #2 (2017)</u> April 27-28 May 1-3 <u>Survey #3 (2017)</u> May 31 June 1-2 June 5-6 <u>Survey #4 (2017)</u> June 26-30 <u>Survey #1 (2018)</u> April 9-12 <u>Survey #2 (2018)</u> May 14-17 <u>Survey #3 (2018)</u> June 4-6 <u>Survey #4 (2018)</u> June 26-28	Lauren (Dorough) Simpson† Jon Renard† Alfredo Aguirre Jerry Aguirre Kevin Cornell Taylor Dee Greg Hampton Carley Lancaster Adam Schroeder Wendy Turner Ryan Villanueva Phillip Wasz Brian Zitt	Section 4.4.3 Figure 17
Burrowing Owl Habitat Assessment and Burrow Survey	Special-Status Plant Habitat Assessment Area (49-Acre Project Addition and a 500-foot buffer)	October 9, 2018	Lauren (Dorough) Simpson† Greg Hampton Torrey Rotellini Phillip Wasz	Section 4.4.3 Figure 17

*As defined in Section 1.4, the project boundaries comprise the Solar Field Area, Preferred Gen-Tie Alignment and Alternative Gen-Tie Alignment

†Survey Lead

4.1 Literature Review

A review of the CNDDDB, CNPS Electronic Inventory, and the 2007 Biological Resources Technical Report for the VV2 Project (Appendix A) yielded records of special-status species occurrences within five miles of the project boundaries. The natural histories and results of the literature search for each targeted species are discussed individually below.

4.1.1 Special-Status Plants

Special-status plants were not identified within or in the vicinity of the project boundaries during focused surveys conducted in 2006 within the area surveyed for the VV2 Project (Appendix A). However, according to the CNDDDB, numerous special-status plant species have been recorded within five miles of the project boundaries. Of all available records, a total of 10 species were identified as those with the potential for occurrence within the project boundaries. Of the 10 special-status plant species identified during the

literature search, three have a high potential to occur, two have a moderate potential to occur, and five have a low potential to occur in the project boundaries (Table 2).

Scientific Name Common Name	Status	Flowering Period / Elevation Range (feet above msl)	Habitat	Potential to Occur in the Project Boundaries
<i>Opuntia basilaris</i> var. <i>brachyclada</i> short-joint beavertail cactus	USFWS: None CDFW: None CRPR: 1B.2	Apr – June (Aug) (1,390-5,905)	Chaparral; Joshua tree woodland; Mojavean desert scrub; Pinyon and juniper woodland.	High: Suitable habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.
<i>Canbya candida</i> white pygmy-poppy	USFWS: None CDFW: None CRPR: 4.2	Mar – June (1,970-4,970)	Gravelly, sandy, granitic; Joshua tree woodland; Mojavean desert scrub; pinyon and juniper woodland.	High: Suitable habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.
<i>Pediomelum castoreum</i> Beaver Dam breadroot	USFWS: None CDFW: None CRPR: 1B.2	Apr – May (610-1,525)	Sandy, washes and roadcuts; Joshua tree woodland; Mojavean desert scrub.	High: Suitable habitat occurs within the project boundaries; known occurrence exists within five miles of the project boundaries.
<i>Mimulus mohavensis</i> Mojave monkeyflower	USFWS: None CDFW: None CRPR: 1B.2	Apr – June (2,000-3,940)	Sandy or gravelly, often in washes; Joshua tree woodland; Mojavean desert scrub.	Moderate: Marginal or limited amounts of habitat occurs within the project boundaries; known occurrence exists within five miles of the project boundaries.
<i>Sclerocactus polyancistrus</i> Mojave fishhook cactus	USFWS: None CDFW: None CRPR: 4.2	Apr – July (2,100-7,610)	Commonly found in carbonate soils; Great Basin scrub; Joshua tree woodland; Mojavean desert scrub.	Moderate: Marginal or limited amounts of habitat occurs within the project boundaries; known occurrence exists within five miles of the project boundaries.
<i>Eremothera boothii</i> ssp. <i>boothii</i> Booth's evening primrose	USFWS: None CDFW: None CRPR: 2B.3	Jun – Aug (2,950-7,875)	Joshua tree woodland; Pinyon and juniper woodland; sandy soils.	Low: Limited habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.
<i>Androstephium breviporum</i> small-flowered androstephium	USFWS: None CDFW: None CRPR: 2B.2	Mar – Apr (330-5,250)	Creosote Bush Scrub; Desert dunes; Mojavean desert scrub.	Low: Limited habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	USFWS: None CDFW: None CRPR: 2B.2	Apr – May (2,300-5,300)	Sandy; desert dunes; Great Basin scrub; Sonoran Desert scrub.	Low: Limited habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (feet above msl)	Habitat	Potential to Occur in the Project Boundaries
<i>Eriophyllum mohavense</i> Barstow woolly sunflower	USFWS: None CDFW: None CRPR: 1B.2	Mar – May (1,640-3,150)	Creosote-bush scrub.	Low: Limited habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.
<i>Cymopterus deserticola</i> Desert cymopterus	USFWS: None CDFW: None CRPR: 1B.2	Mar – May (2,070-4,920)	Sandy; Joshua tree woodland; Mojavean desert scrub.	Low: Limited habitat occurs within the project boundaries; known occurrence exists more than five miles from the project boundaries.

CNPS Rare Plant Ranks (CRPR):

- 1B: Plants rare, threatened, and endangered in California and elsewhere.
- 2B: Plants rare, threatened, or endangered in California but more common elsewhere.
- 3: Plants about which need more information; a review list.
- 4: Plants of limited distribution; a watch list.

CNPS Threat Ranks:

- 0.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2 Fairly threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
- 0.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

4.1.2 Special-Status Wildlife Species

Several special-status wildlife species, including six desert tortoises and four burrowing owls, were identified within or in the vicinity of the project boundaries during focused surveys conducted in 2006 within the area surveyed for the VV2 Project (Appendix A). Trapping studies for Mohave ground squirrel were negative within the area surveyed for the VV2 Project in 2006 (Appendix A). Additionally, according to the CNDDDB, numerous other special-status wildlife species observations were recorded within five miles of the project boundaries. Of all available records, a total of eight species were identified as having potential for occurrence within the project boundaries. Of the eight special-status wildlife species identified during the literature search, four were determined to be present, one has a high potential to occur, one has a moderate potential to occur, and two have a low potential to occur in the project boundaries (Table 3).

Table 3. Special-Status Wildlife Species Potential to Occur within the Project Boundaries			
Scientific Name Common Name	Status	Habitat	Potential to Occur in the Project Boundaries
<i>Gopherus agassizii</i> desert tortoise	USFWS: THR CDFW: THR	Desert valleys with vegetation communities such as alluvial fan, saltbush, creosote bush, desert scrub, and tree yuccas. Burrows in soil, under rocks, and along washes.	Present: Suitable habitat occurs within the project boundaries; known occurrences exist within the database search. Observed within the current project boundary.
<i>Athene cunicularia</i> burrowing owl (burrow & some wintering sites)	USFWS: None CDFW: SSC	Open grasslands including prairies, plains, and savannah, or vacant lots and airports.	Present: Suitable habitat occurs within the project boundaries; known occurrences exist within five miles of the project boundaries. Observed within the current project boundary.
<i>Lanius ludovicianus</i> loggerhead shrike (nesting)	USFWS: None CDFW: SSC	Open country, with scattered shrubs and trees or other perches for hunting; includes agricultural fields, deserts, grasslands, savanna, and chaparral.	Present: Suitable habitat occurs within the project boundaries; Species was observed within the current project boundary.
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	USFWS: None CDFW: THR	Flat or moderately sloped desert habitats with deep sandy or gravelly friable soils. Found in habitats with abundant annual herbaceous vegetation, alluvial fans, desert sink shrublands, and creosote bush scrub.	High: Suitable habitat occurs within the project boundaries; known occurrences exist within five miles of the project boundaries.
<i>Buteo swainsoni</i> Swainson's hawk	USFWS: None CDFW: THR	Breeding habitat typically occurs in grasslands with sparse trees, riparian habitats, juniper-sage flats, and agricultural lands with large trees. Historic ranges included the Mojave Desert, but southern populations have declined dramatically.	Moderate: Marginal nesting habitat is present in the Joshua trees in the project boundaries; however, limited amount of foraging habitat is present; only historic records (greater than 70 years old) occur within five miles of the project boundaries.
<i>Aquila chrysaetos</i> golden eagle (nesting and wintering)	USFWS: None CDFW: FP	Open country including prairies, sagebrush, savannah or sparse woodlands, and barren hills or mountainous areas. Nests on rocky cliff edges or in large trees such as eucalyptus or oak.	Low: Nesting habitat is not present within the project boundaries; however, limited amount of foraging habitat is present; occurs within five miles of the project boundaries.
<i>Vulpes macrotis arsipus</i> desert kit fox	USFWS: None CDFW: Fur-bearing mammal	Open desert, on creosote bush flats, and amongst the sand dunes. Can be found in habitats with less than 20 percent vegetative cover.	Present: Suitable habitat occurs within the project boundaries. Observed within the current project boundary.
<i>Taxidea taxus</i> American badger	USFWS: None CDFW: SSC & Fur-bearing mammal	Prefers open areas and may also frequent brushlands with little groundcover. When inactive, occupies underground burrow. Young are born in underground burrows.	Low: Marginal habitat is present within the project boundaries; no database occurrences exist within five miles of the project boundaries.

Table 3. Special-Status Wildlife Species Potential to Occur within the Project Boundaries

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Project Boundaries
Federal Designations (Federal Endangered Species Act, USFWS):		State Designations (California Endangered Species Act, CDFW):	
END	Federally listed, Endangered	END	State-listed, Endangered
THR	Federally listed, Threatened	THR	State-listed, Threatened
FC	Federal Candidate Species	SSC	California Species of Special Concern
DL	Federally Delisted	FP	Fully Protected Species

4.1.3 Natural History and Documented Occurrences

Detailed natural histories and documented occurrences for Mohave ground squirrel, desert tortoise, and burrowing owl are discussed below.

Mohave Ground Squirrel

Mohave ground squirrel is a rodent species endemic to California that is listed as threatened under CESA (CDFW 2018b). It is limited to a geographic range in the western Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties. Mohave ground squirrel has the smallest geographic range of the seven *Xerospermophilus* ground squirrels in California: an estimated 7,691 square miles (2 million hectares [ha]) in the western Mojave Desert on federal, state, and private lands (Gustafson 1993). Mohave ground squirrels mostly inhabit flat to moderate terrain and avoid areas with steep contours (Laabs 1998). In general, the range of Mohave ground squirrel is bounded by the Sierra Nevada escarpment to the west, San Gabriel and San Bernardino mountains to the south, Mojave River to the east, and Owens Lake and Panamint Valley to the north and northeast (Gustafson 1993; Laabs 1998). Studies have shown that optimal habitat types for Mohave ground squirrel typically include plant communities that harbor spiny hopsage (*Grayia spinosa*) and winter fat (*Krascheninnikovia lanata*), including creosote bush scrub, saltbush (*Atriplex canescens*) scrub, and Joshua tree woodland communities (Scarry et al. 1996; Leitner and Leitner 1998). Mohave ground squirrels have been found at elevations ranging from 1,800 to 5,000 feet above msl (Brooks and Matchett 2002; Johnson 2008).

The natural history and habitat requirements for Mohave ground squirrel are highly dependent on elevation, climate, topography, and weather. This diurnal squirrel is only active in the early spring through mid-summer (approximately mid-February through mid-August) when it feeds on native shrubs and annual plants. Adults begin to emerge from their burrows in February to begin reproduction, males emerging approximately two weeks before females. By the end of March, litters of four to 10 young (average of six) are born to each female. By late May, the young begin to disperse (Johnson 2008). As summer approaches and vegetation begins to dry out, Mohave ground squirrels prepare for a long period of winter dormancy (hibernation) by consuming as many nutrients and fats as they can in their diet. During mid-summer (July to mid-August), the squirrels return to their underground nests and by this time, body temperature, heart rate, and metabolism have fallen drastically to prepare for hibernation. This species can survive in this physiological state on their stored body fats until the winter rains come and

restore the vegetation. If sufficient rains (more than three inches) do not occur during the winter, Mohave ground squirrels will not reproduce due to lack of adequate vegetation to support the young (Harris and Leitner 2004). When a drought year occurs, the squirrels will convert all available forage to body fat and enter hibernation as early as April. These biological and physiological adaptations allow them to survive the harsh conditions of the Mojave Desert.

Threats to Mohave ground squirrel populations include land use conversion for agricultural and other development, as well as habitat degradation from grazing, off-road vehicle use, and other human disturbances (CDFG 1990). Overall, about 10 percent of the habitat for Mohave ground squirrel has been converted for development (agricultural, residential, industrial, and commercial), with more of that habitat being lost as development spreads rapidly in the southern part of their range (Laabs 1998).

According to CNDDDB, seven occurrences of Mohave ground squirrel have been documented within approximately five miles of the project boundaries; however, all but three of these occurrences are historic (more than 20 years old) (CDFW 2018a). Table 4 describes each of these occurrences and their distances from the project boundaries. Occurrence 329 was made in 2007 where a single adult was captured during a protocol trapping effort east of Mormon Trail Road, approximately 0.5 mile south of the project boundaries. Occurrence 325 was made in 2004 where a single female squirrel was observed at a burrow site approximately 2.9 miles to the west of the project boundaries. Occurrence 372 was made in 2011 where a juvenile was captured during protocol trapping conducted in the Adelanto area, approximately five miles southwest of the project boundaries. Four historic Mohave ground squirrel observations have been documented between approximately 0.2 and 4 miles from the project boundaries between 1920 and 1987. The Mohave ground squirrels documented in these historical records were identified by a variety of methods, including museum specimens, trapping, visual detection, and unknown methods of detection (visual or auditory; CDFW 2018a). It is important to note that the location data associated with these historical CNDDDB records include a center point and an associated accuracy circle. The center point is not necessarily the point of the actual occurrence, but merely the center of the general area where the occurrence was recorded. The four historical records were assigned circles with varying radii of 900 to 5,250 feet based on the accuracy of the record assessed by CDFW. The exact location of the occurrence is not precise due to the vagueness in the data recorded at the time of the observation. Despite these historic records, it is important to note that previous studies conducted in 2006 for the VV2 Project located within the current project boundaries yielded negative results for Mohave ground squirrel trapping (Appendix A).

Element Date	Occurrence Number	Occurrence Details	Distance from Project Boundaries
6-24-2011	372	One juvenile captured during a protocol trapping effort.	Approximately five miles southwest of the project boundaries in Adelanto.
4-24-2007	329	One adult captured during a protocol trapping effort.	Approximately 0.5 mile south of the project boundaries, 450 feet east of Mormon Trail Road.
4-21-2004	325	One female observed at burrow site.	Approximately three miles west of the project boundaries.
6-14-1987	258*	One individual detected (detection method is unknown).	The center point is located approximately 0.2 mile southwest of project boundaries. Immediately adjacent to the project boundaries along Helendale Road. However, the location accuracy includes a circle with a 900-foot radius from the center point.
6-3-1980	283*	Two individuals detected (detection method is unknown).	The center point is located approximately three miles southeast of the southernmost project boundary extent. However, the location accuracy includes a circle with a 900-foot radius from the center point.
6-28-1977	12*	One individual trapped.	The center point is located approximately four miles southeast of the southernmost project boundary extent. However, the location accuracy includes a circle with a 1,200-foot radius from the center point.
5-24-1920	22*	One female collected.	The center point is located approximately one mile east of the project boundaries. However, the location accuracy includes a circle with a one-mile radius from the center point.

*These records represent historical records, but it is important to note that location data associated with these older records can often be imprecise.

Desert Tortoise

The desert tortoise is listed as threatened under both the CESA and FESA (CDFW 2018b) with designated critical habitat (USFWS 1990). In 2011 the desert tortoise underwent a taxonomic revision, prior to which all desert tortoises occurring in the Mojave and Sonoran Deserts both west and east of the Colorado River were classified as *Gopherus agassizii*. In 2011, after intensive genetic tests and literature reviews were conducted, it was determined that *G. agassizii* was, in fact, two separate and distinct species based on morphological and behavioral features, range, and genetic material. As a result, desert tortoises occurring in the Mojave and Sonoran Deserts in California are now known as Agassiz’s desert tortoise (*G. agassizii*), while those tortoises occurring east and south of the Colorado River have been described as a new species, Morafka’s desert tortoise (*G. morafkai*) (Murphy et al. 2011). For the purposes of this report, all references to desert tortoise in this document refer to Agassiz’s desert tortoise.

The desert tortoise inhabits the Mojave and Sonoran deserts in California. This terrestrial reptile species occurs in the southwestern portion of the state from Inyo to Imperial counties, including eastern Kern, Los Angeles, San Bernardino, Riverside, and San Diego counties (Berry et al. 2002).

Desert tortoises are associated primarily with Mojave creosote bush scrub, but have also been found in succulent scrub, cheesebush (*Ambrosia salsola*) scrub, blackbush (*Coleogyne ramosissima*) scrub, hopsage

scrub, shadscale (*Atriplex confertifolia*) scrub, microphyll woodland, and Mojave atriplex-allscale (*Atriplex* spp.) vegetation communities (Boarman 2002). This species typically inhabits flats, gently sloping terrain, valleys and bajadas, washes, rocky hillsides, and open flat desert areas with sandy to sandy-gravel soils that offer suitable substrates for burrowing and nesting (Boarman 2002; USFWS 1994). Desert tortoises are typically found at an elevation range of approximately 1,970 to 3,300 feet above msl but have been found higher than 3,940 feet above msl (Boarman 2002). Desert tortoises are known to occupy a home range of approximately 0.75 square mile and travel long distances for resource use (USFWS 1994).

Desert tortoises are often considered an indicator species for the desert community (Desert Tortoise Council 1985). Indicator species are generally characteristic of their natural community and serve as unique indicators of the overall health of their ecosystem and the other species that exist there.

Desert tortoise activity patterns are controlled primarily by ambient temperature and precipitation. In the western Mojave Desert, desert tortoises are generally most active between April and June, and September and October, when the herbaceous vegetation they prefer (grasses and flowers of annual plants) is most abundant. They have also been known to eat other items such as insects, lizards, and feces, but these items make up a very small proportion of their diets. In periods of harsh or unusually dry conditions, desert tortoises can retreat to burrows where they lower their metabolism and loss of water and consume very little food. During inactive periods desert tortoises hibernate, aestivate, or rest in subterranean burrows, spending approximately 98 percent of their time in these cover sites. During active periods, they usually spend nights and the hotter part of the day in their burrow or resting under shrubs (Boarman 2002).

Desert tortoises experience delayed sexual maturity and are long lived. They reach sexual maturity at approximately 12 to 20 years of age. Tortoise eggs are laid in spring (April to June) and occasionally in fall (September to October). Female tortoises lay between one to eight eggs in sandy or friable soil, often at the mouth of burrows. The eggs incubate unattended for 90 to 120 days, during which the sex of the young is determined by soil temperature. Birth intervals range from zero to three times per year (Boarman 2002).

The range of the desert tortoise has declined because of several factors, including habitat loss due to human-related activities, disease caused by reintroduction efforts and other contamination by humans, illegal collection, road kills, habitat degradation by invasive plants, and predation on tortoises by dogs and juvenile tortoises by ravens (Berry and Medica 1995).

Seven desert tortoise occurrences have been documented within a five-mile radius of the project boundaries (CDFW 2018a). Table 5 describes each of these CNDDDB occurrences and their distances from the project boundaries. The closest CNDDDB record of desert tortoise was an observation in 2002 of one adult in a burrow within the project boundaries where Helendale Road meets Mormon Trail Road (Occurrence 70). Previous studies conducted in 2006 for the VV2 Project located within the current project boundaries documented six live desert tortoises, 39 desert tortoise burrows, 29 desert tortoise scat, and five desert tortoise carcasses (Appendix A). The 2007 VV2 Project report also noted that a study conducted by Tom Dodson Associates in 2003 documented eight live desert tortoises occurring in the

area covered by the SCLA Specific Plan Amendment and Rail Services Project (Appendix A), which overlaps portions of the current project boundaries.

Element Date	Occurrence Number	Occurrence Details	Distance from Project Boundaries
5-5-2008	149	Two adult tortoises were observed approximately 0.17 mile apart in May 2008.	Approximately 1 mile north of the project boundaries.
5-2-2008	140	One adult tortoise was observed in April and in May 2008.	Approximately 0.25 mile east of project boundaries.
4-10-2008	142	One adult tortoise was observed in April 2008.	Adjacent to project boundaries approximately 0.35 mile east of the project boundaries.
4-9-2008	141	One adult tortoise was observed in April 2008.	Adjacent to project boundaries approximately 0.15 east of the project boundaries.
8-30-2007	51	Occurrence represents three observation instances: two tortoises, 19 pallet burrows, nine hibernation burrows observed in 1990, two adult tortoises (one male and one female), three burrows, one pallet burrow, and multiple scats observed in 2003, and one sub-adult tortoise observed in 2007.	Approximately 4 miles south of southernmost extent of the project boundaries.
3-28-2002	70	One adult was observed resting in a burrow in January and in March 2002.	Within project boundaries, just north of where Helendale Road meets Mormon Trail Road.
3-27-2002	169	One adult was observed at a burrow site in March 2002.	Approximately 4.3 miles northwest of the project boundaries.

Burrowing Owl

The burrowing owl is a small, migratory owl found in various habitats throughout North America. With a mottled brown and white appearance, burrowing owls are usually very cryptic with their surroundings when not flying or foraging. Most of their time is spent on the ground in front of burrow entrances or sitting on low perches near their burrows. These owls are unusual in that they either excavate their own burrows for shelter and breeding purposes, or they rely on California ground squirrels (*Otospermophilus beecheyi*) and other burrowing mammals for burrow construction. Burrowing owls have also been known to nest within natural rock cavities, debris piles, culverts, and pipes (Rosenberg et al. 1998).

Many areas in the Mojave Desert provide wintering habitat, other areas provide breeding habitat, and some areas provide both wintering and breeding habitat. Due to the adaptive migratory behavior of the burrowing owl, one location in the desert could contain both wintering individuals and permanent residents in proximity to one another.

Habitat requirements for burrowing owls consist of arid, open areas with sparse vegetation cover, such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Friable soils are also important habitat requirements for this species. Though habitat loss due to urbanization is a contributing factor to population declines, burrowing owls seem to be tolerant of nearby human impacts when suitable habitat is present and maintained, and when owls are not breeding.

Burrowing owls breed in the spring and are generally monogamous throughout the breeding season. Typically, only one clutch is laid per breeding season and average clutch sizes are six to seven eggs, although only three to five hatchlings will survive to the fledging stage. The female will incubate the eggs for 27 to 30 days. The male provides food for the female during incubation and to the female and young just after hatching (NatureServe 2018). The young fledge the nest around six weeks and have been known to remain in the natal area and forage with the adults for a period of time thereafter. Although active throughout the day, burrowing owls mainly forage nocturnally for small vertebrate and invertebrate prey items, such as small mammals, lizards, birds, and beetles.

The primary reasons for burrowing owl population decline are habitat loss, degradation, and fragmentation due to agricultural and urban development. Predation by natural predators (hawks, larger owls, and mammals) and introduced predators (domestic cats and dogs) is also responsible for large declines of this species.

Burrowing owl and/or burrowing owl sign has been documented within the vicinity of the project boundaries within recent history (CDGW 2018a). Table 6 describes each of these CNDDDB occurrences and their distances from the project boundaries. Thirteen documented burrowing owl occurrences have been recorded within a five-mile radius of the project boundaries (CDFW 2018a). Of the 15 documented burrowing owl occurrences, only two (Occurrence 449 and Occurrence 450) were documented less than one mile from the project boundaries. Burrowing owl Occurrence 449 was documented approximately 0.5 mile southeast of the project boundaries in 2002 when a female owl was relocated to an artificial burrow (CDFW 2018a). Burrowing owl Occurrence 450 was documented immediately adjacent to the project boundaries approximately 300 feet south of the intersection of Helendale road and Mormon Trail Road. Occurrence 450 was of one adult owl observed at a burrow in March of 2002, and in May of 2002, one adult owl, two live juvenile owls, and one dead juvenile owl were found at the mouth of the same burrow (CDFW 2018a). All other documented occurrences of burrowing owl in the CNDDDB within five miles of the project boundaries were at least 1.2 miles away and all were documented south of the project. Previous studies conducted in 2006 for the VV2 Project located within the current project boundaries documented four live burrowing owls, 115 potential burrowing owl burrows, and one burrowing owl carcass (Appendix A).

Element Date	Occurrence No.	Occurrence Details	Distance from Project Boundaries
6-11-2008	663	Two adults and two juveniles observed in 2002. One adult observed in April 2008 and seven owls observed at same site in June 2008.	Approximately 2.6 miles south of the southernmost project boundary extent.
4-3-2008	1572	One adult owl observed at burrow with fresh sign (scat, pellets, and feathers).	Approximately 1.2 miles southwest of the southernmost project boundary extent.
12-10-2007	253	Burrow found containing an old nest in 1990, two adult owls observed in the same location in 2007.	Approximately 4.0 miles south of the southernmost project boundary extent.
5-20-2007	1606	Two adults observed near canid burrows and two adults and one juvenile observed at a ground squirrel burrow.	Approximately 2.3 miles southwest of the southernmost project boundary extent.
5-9-2007	1200	Burrowing owl burrow with fresh sign (pellets and white wash) documented.	Approximately 1.8 miles southwest of the southernmost project boundary extent.
5-9-2007	1201	Burrowing owl burrow documented in debris pile, deceased owl parts observed inside.	Approximately 2.4 miles southwest of the southernmost project boundary extent.
4-21-2007	1554	One breeding pair and two juveniles observed. Burrow documented containing an old nest.	Approximately 3.8 miles south of the southernmost project boundary extent.
2-27-2006	944	One adult owl observed in 2005 in an adjacent burrow. One adult owl also observed in 2006.	Approximately 4.2 miles south of the southernmost project boundary extent.
8-2-2005	1049	Five burrows occupied by two adults and five juveniles were observed.	Approximately 4.0 miles southeast of the southernmost project boundary extent.
9-15-2004	941	One owl was relocated from this site.	Approximately 4.6 miles south of the southernmost project boundary extent.
5-21-2002	450	One adult owl observed at a burrow in March 2002. One adult owl, two live juvenile owls, and one dead juvenile owl found at the mouth of the same burrow in May 2002.	Adjacent to the project boundaries 300 feet south of the intersection of Helendale and Mormon Trail Roads.
3-26-2002	449	A female owl was relocated from this location to an artificial burrow 600 feet east.	Approximately 0.5 mile southeast of the project boundaries.
4-3-1997	252	One adult owl was observed occupying a potential desert tortoise burrow.	Approximately 2.7 miles south of the southernmost project boundary extent.

4.2 Biological Reconnaissance Survey

ECORP biologists Phillip Wasz and Kevin Cornell conducted a biological reconnaissance survey on March 23 and 24, 2017. Phillip Wasz revisited the project on April 18, 2018 to assess areas that were added to the project design since the previous habitat assessment was conducted in 2017. Phillip Wasz conducted a final biological reconnaissance survey of the 49-acre project addition on October 9, 2018. During the

surveys, suitable habitat for special-status species was identified, and vegetation communities present within the project boundaries were also mapped.

4.2.1 Site Characteristics and Land Use

The project consists of desert scrub vegetation communities typical of the Mojave Desert. The northern portion of the project boundaries is surrounded by open land that consists primarily of Mojave creosote bush scrub and is bounded by Desert Flower Road along the northern border, undeveloped open land along the southern and eastern borders, and Helendale Road along most of the western border. The Mojave River is located less than one mile east of the project boundaries. The southern portion of the project boundaries is also surrounded by open land consisting of Mojave creosote bush scrub with the VVWRA facility to the east, SCLA to the west, and multiple basins towards the south. Surrounding land uses consist of industrial developments, government land, residential developments, the VVWRA facility, the SCLA, and previously disturbed land. The closest occupied residential development to the project boundaries is approximately 0.75 mile to the west in the City of Adelanto. Large amounts of trash including debris from abandoned buildings (i.e., wood, concrete), furniture, toys, drink containers, and clothing were found scattered throughout the project boundaries with the majority located in the northern half of the proposed solar field. Representative site photographs taken during the survey are included in Appendix B.

4.2.2 Soils

Soils on the site were generally sandy and consisted of Bryman loamy fine sand and Cajon sand with a few small areas of Haplargids-Calciorthids complex along the eastern border and southern portion of the project boundaries (NRCS 2018).

4.2.3 Vegetation Communities

The project supports several different vegetation communities with varying levels of disturbance. Vegetation communities and other land cover types observed throughout the project were typical of those found in the Mojave Desert: desert scrub communities, desert wash communities (vegetated and unvegetated drainages), disturbed lands, and developed areas (industrial). Some portions of the project boundaries are disturbed from unauthorized off-highway vehicle (OHV) use, trash dumping, and abandoned/dilapidated housing structures and remnant foundations.

Vegetation communities and land cover types identified during the biological reconnaissance survey included Mojave creosote bush scrub, which was the dominant vegetation community within the project boundaries, desert saltbush scrub, Mojave Desert wash scrub, disturbed land, and urban/developed land (Figures 3 and 4). No special-status habitats or vegetation communities were observed within the project boundaries. Descriptions of each vegetation community and land cover type that are present in the project boundaries, as well as representative photos, are provided below. Table 7 provides the acres of each vegetation community that was mapped during the biological reconnaissance survey.

Vegetation Community Name	Acreage Mapped within Project with Preferred Gen-Tie Alignment*	Acreage Mapped within Project with Alternative Gen-Tie Alignment*
Mojave Creosote Bush Scrub	566.2	568.4
Mojave Creosote Bush Scrub (Disturbed)	3.7	3.7
Desert Saltbush Scrub	1.1	2.7
Mojave Desert Wash Scrub	0.3	0.2
Disturbed	41.6	45.1
Developed	4.9	0.2
TOTAL	617.8	620.3

*Note that these acreages do not represent exact impact acreages; impact acreages to vegetation communities are presented under a separate cover (ECORP 2018b).

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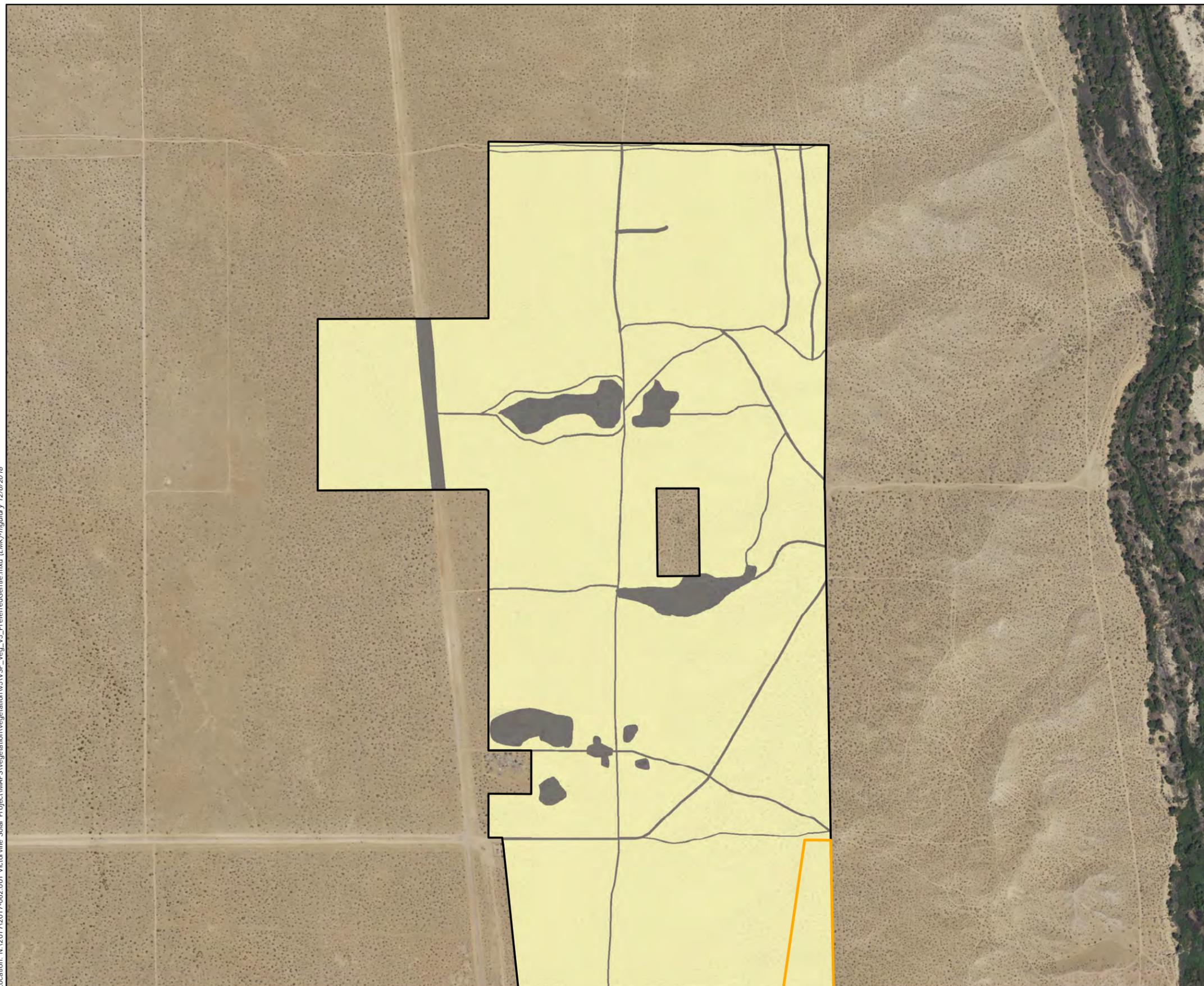


Figure 3
Vegetation Communities
(Preferred Gen-Tie Alignment)
Sheet 1

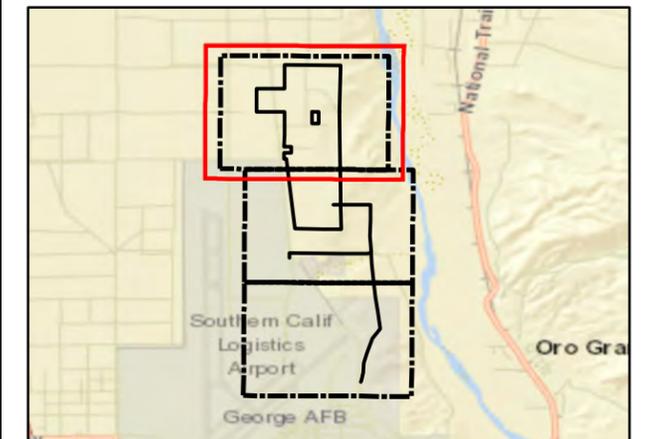
Map Features

- Project Boundaries with Preferred Gen-Tie Alignment
-  49-Acre Project Addition
-  50-ft Buffer of Gen-Tie Alignment

Vegetation Community

-  Mojave Creosote Bush Scrub
-  Disturbed

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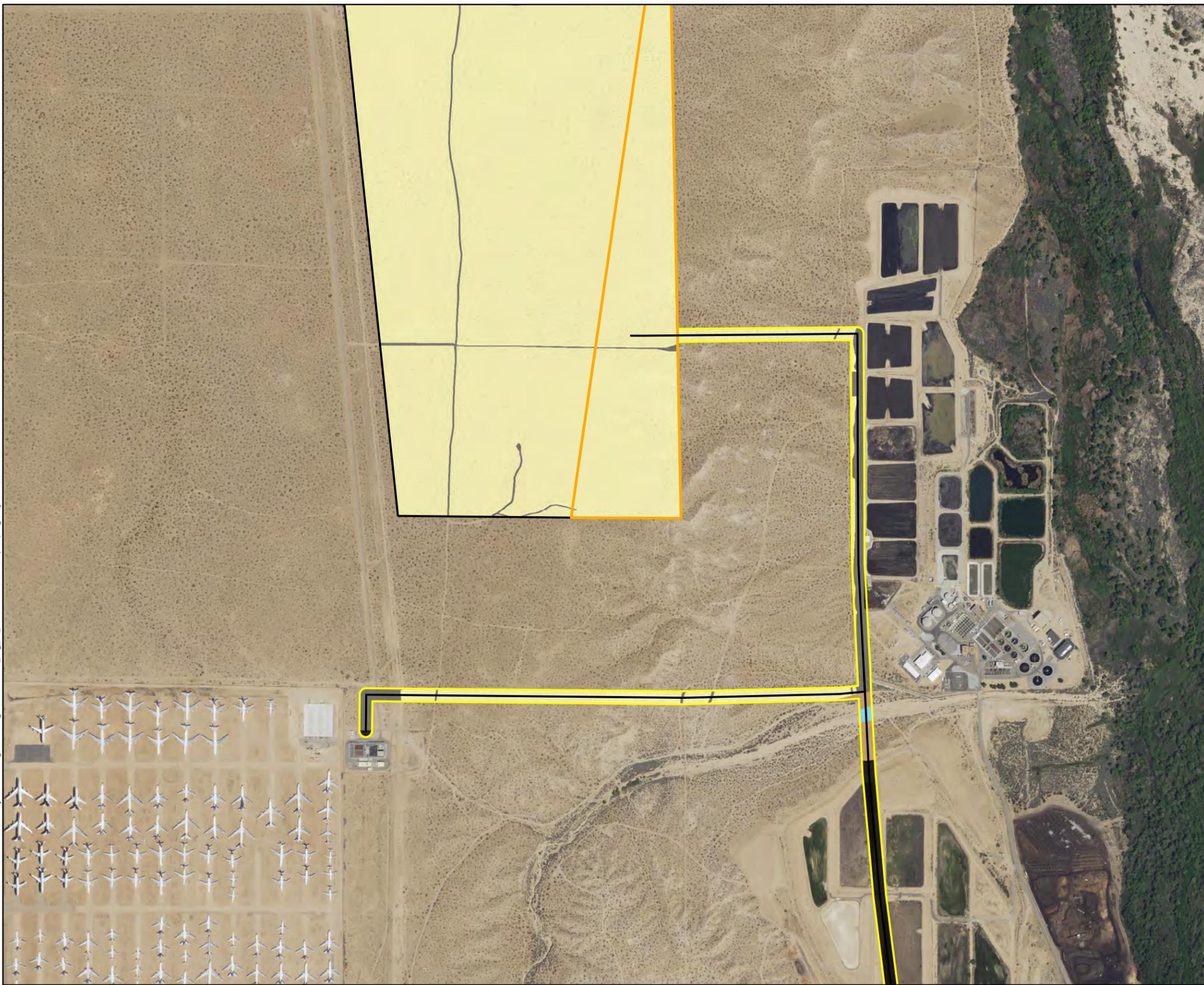
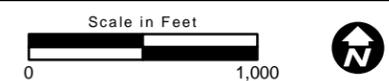
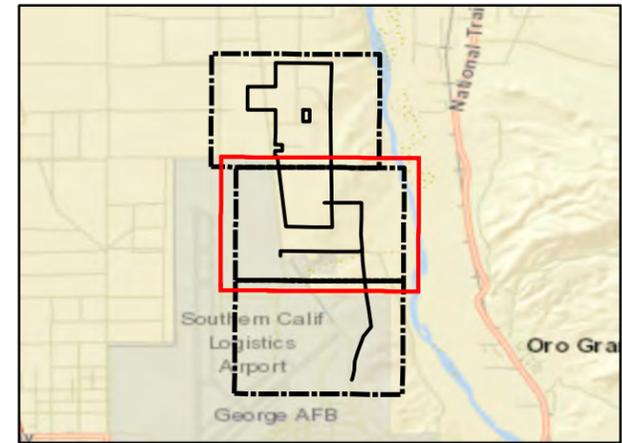


Figure 3 Vegetation Communities (Preferred Gen-Tie Alignment) Sheet 2

- Map Features**
- Project Boundaries with Preferred Gen-Tie Alignment
 - 49-Acre Project Addition
 - 50-ft Buffer of Gen-Tie Alignment
- Vegetation Community**
- Desert Saltbush Scrub
 - Mojave Creosote Bush Scrub
 - Mojave Desert Wash Scrub
 - Disturbed
 - Developed

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



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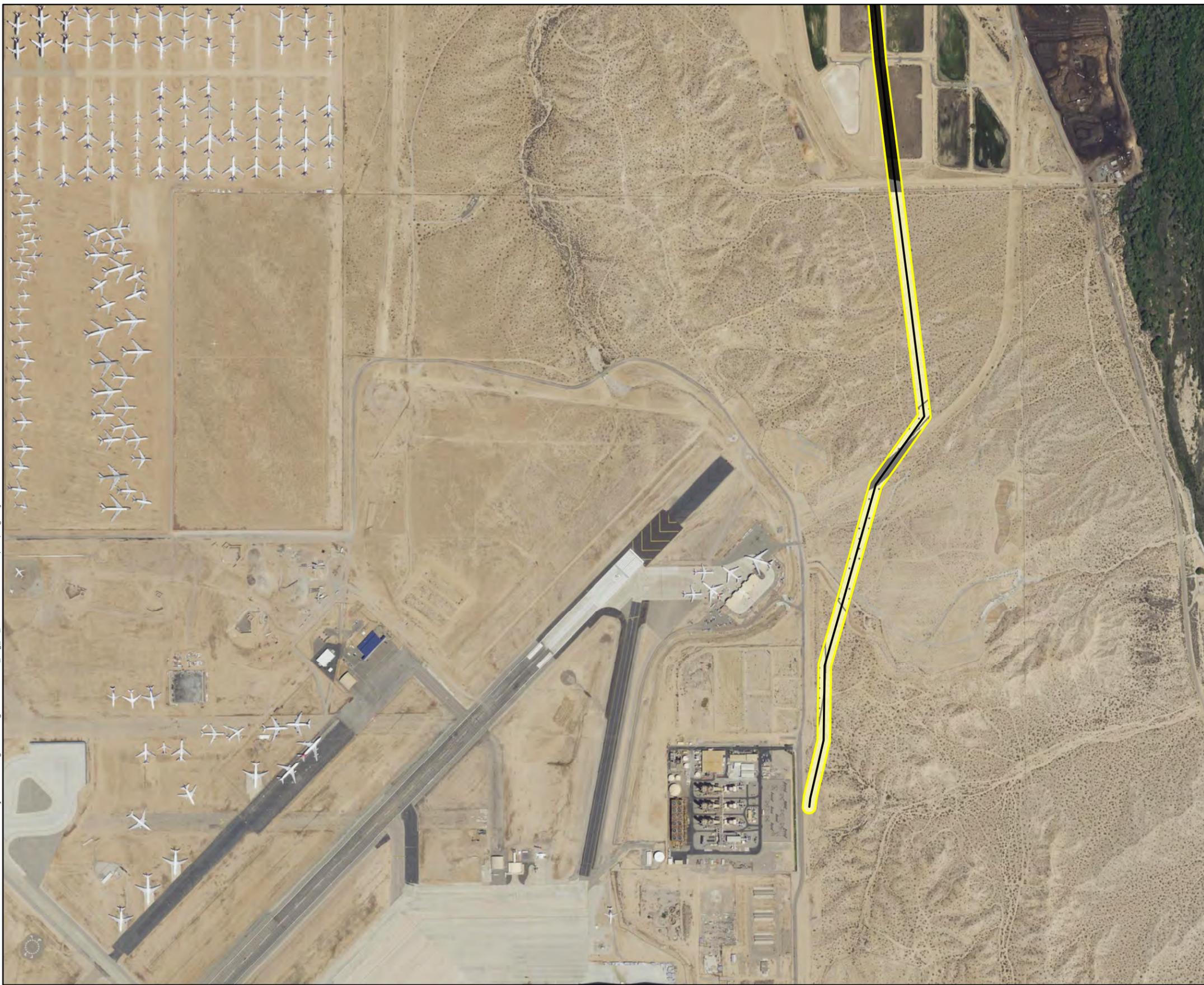
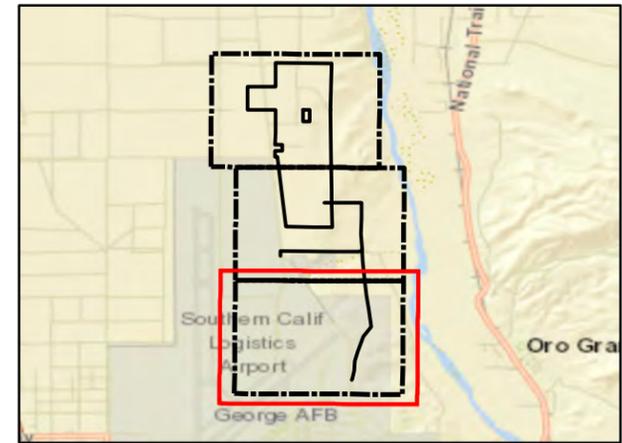


Figure 3
Vegetation Communities
(Preferred Gen-Tie Alignment)
Sheet 3

- Map Features**
- Project Boundaries with Preferred Gen-Tie Alignment
 - 50-ft Buffer of Gen-Tie Alignment
- Vegetation Community**
- Disturbed Mojave Creosote Bush Scrub
 - Mojave Creosote Bush Scrub
 - Disturbed
 - Developed

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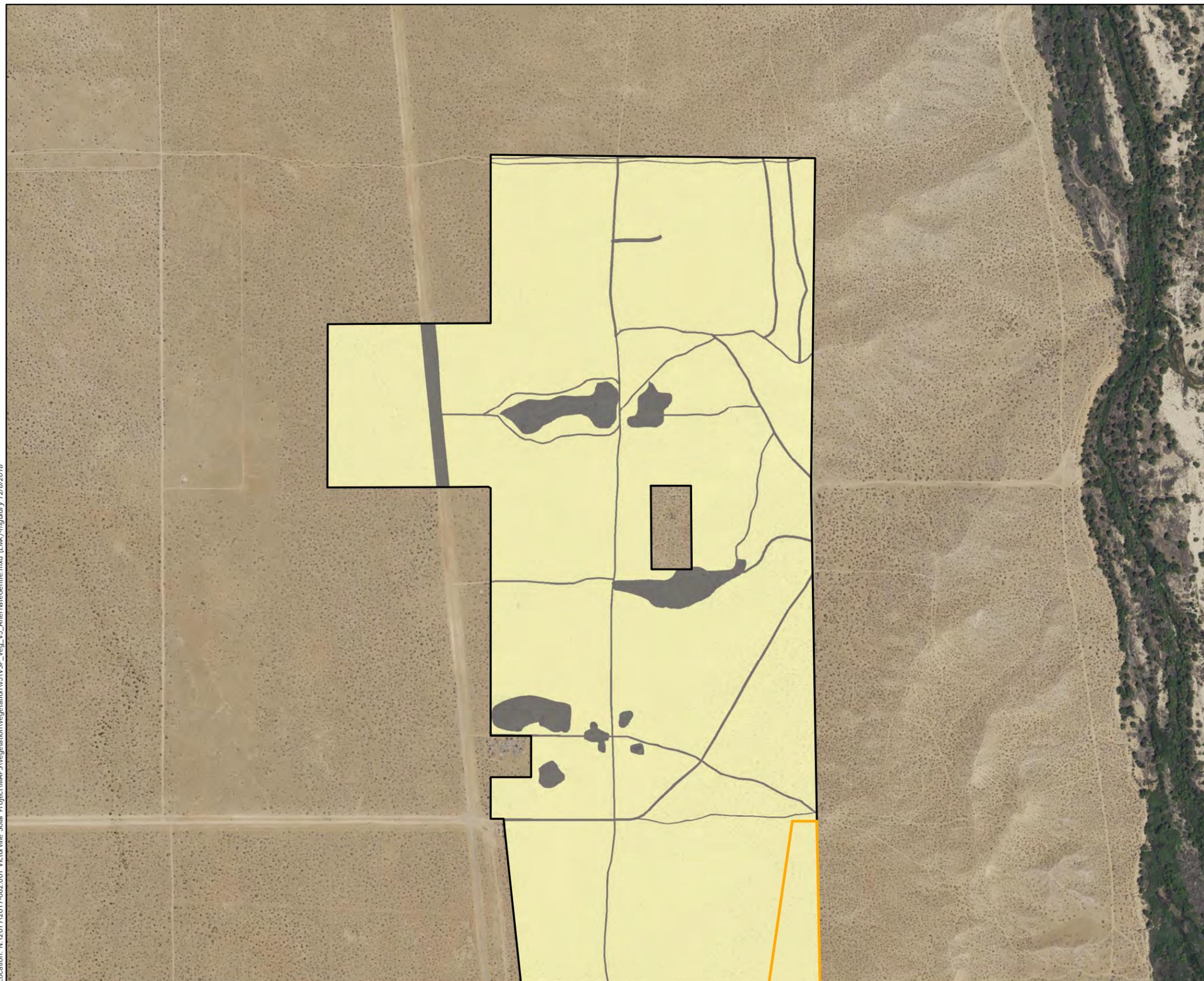


Figure 4
Vegetation Communities
(Alternative Gen-Tie Alignment)
Sheet 1

Map Features

— Project Boundaries with Alternative Gen-Tie Alignment

49-Acre Project Addition

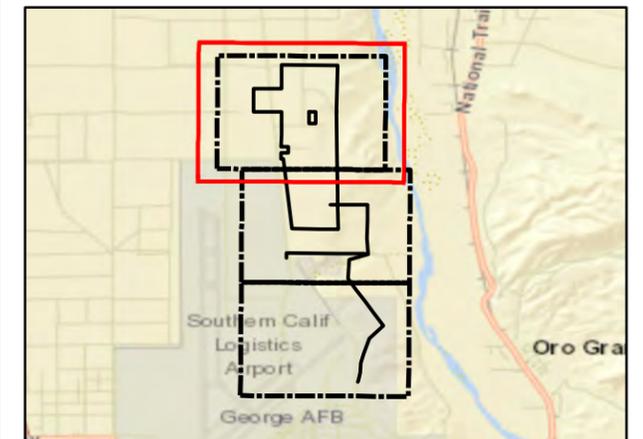
50-ft Buffer of Gen-Tie Alignment

Vegetation Community

Mojave Creosote Bush Scrub

Disturbed

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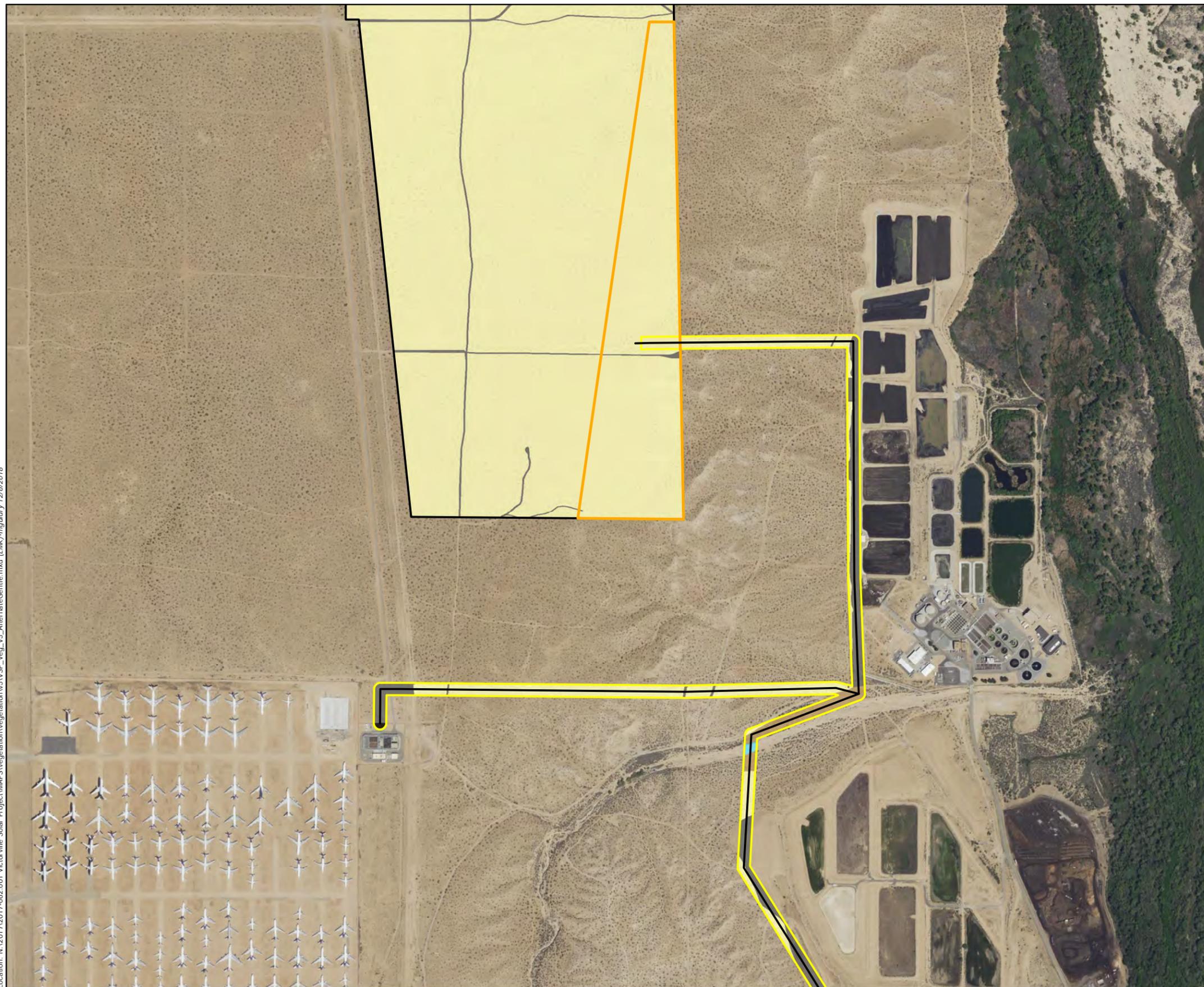


Figure 4
Vegetation Communities
(Alternative Gen-Tie Alignment)
Sheet 2

Map Features

— Project Boundaries with Alternative Gen-Tie Alignment

▭ 49-Acre Project Addition

▭ 50-ft Buffer of Gen-Tie Alignment

Vegetation Community

▭ Desert Saltbush Scrub

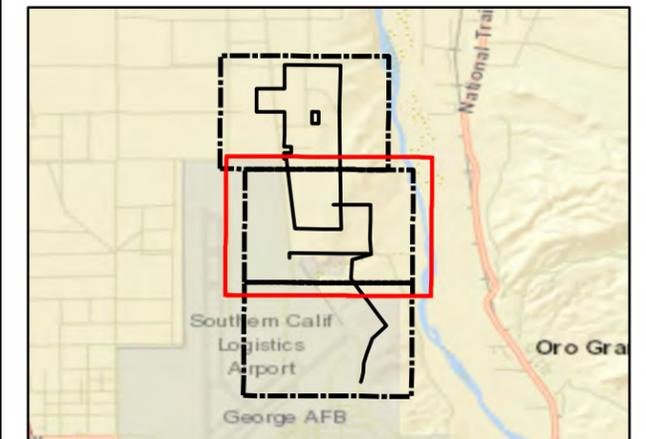
▭ Mojave Creosote Bush Scrub

▭ Mojave Desert Wash Scrub

▭ Disturbed

▭ Developed

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



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Figure 4
Vegetation Communities
(Alternative Gen-Tie Alignment)
Sheet 3

Map Features

— Project Boundaries with Alternative Gen-Tie Alignment

50-ft Buffer of Gen-Tie Alignment

Vegetation Community

Disturbed Mojave Creosote Bush Scrub

Mojave Creosote Bush Scrub

Disturbed

Developed

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Mojave Creosote Bush Scrub

Mojave creosote bush scrub is a native desert scrub community that is common to the Mojave Desert and generally consists of relatively open stands of the dominant shrub, creosote bush. Typically, this community occurs in well-drained, sandy soils 246 feet below and 3,280 feet above msl. Within the project boundaries, additional plant species associated with this vegetation community include burrobush (*Ambrosia dumosa*), cheesebush, Joshua tree, and Nevada ephedra (*Ephedra nevadensis*) (Figure 5). This vegetation community covers the majority of the project boundaries.



Figure 5. Mojave creosote bush scrub in the project boundaries.

Desert Saltbush Scrub

Desert saltbush scrub consists primarily of low-growing shrubs with an open to continuous canopy and a variable herbaceous layer that includes seasonal annuals. Desert saltbush scrub occurs at elevations between 246 feet below msl and 7,217 feet above msl. Within the project boundaries, plant species that are associated with this vegetation community include fourwing saltbush (*Atriplex canescens*), green ephedra (*Ephedra viridis*), creosote bush, and hop-sage (*Grayia spinosa*) (Figure 6). This community is present within a small southern portion of the project boundaries adjacent to the large desert wash (described below).



Figure 6. Desert saltbush scrub within the southern project boundaries along the Gen-Tie Line.

Mojave Desert Wash Scrub

Several desert washes and drainages are present within the project boundaries, particularly within the eastern portion of the proposed solar field. A large desert wash was observed within the southern portion of the project boundaries near the VVWRA facility. This wash runs in a west-east direction and drains directly into the Mojave River located approximately 2,300 feet to the east and contains Mojave Desert Wash Scrub (Figure 7). This community occurs at elevations from 0 to 5,905 feet above msl. Within the project boundaries, plant species associated with this vegetation community include cheesebush, California buckwheat (*Eriogonum fasciculatum*), and mulefat (*Baccharis salicifolia*).



Figure 7. Large desert wash crossed by the proposed Gen-Tie Line.

Disturbed

The disturbed land classification includes areas where the native vegetation community has been heavily influenced by human actions, such as grading, trash dumping, and OHV use, but lack development. Disturbed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Disturbed land is located within the project boundaries and includes areas adjacent to roads, along OHV trails, the area covered by the closed landfill located east of SCLA, and next to developments such as the basins and fencing around SCLA and the VVWRA facilities. In areas classified as disturbed land, vegetation was absent or consisted primarily of non-native species, such as Russian thistle (*Salsola tragus*) and common Mediterranean grass (*Schismus barbatus*). An example of a disturbed area in the project boundaries is depicted in Figure 8.



Figure 8. Recently disturbed and graded land with sparse vegetation.

Urban/Developed Land

Areas designated as urban/developed land have infrastructure present and any vegetation in the immediate surroundings is comprised of ornamental landscaping. Urban/developed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Developed areas were located within the project boundaries and included abandoned residences and government facilities. Often these developed areas were located adjacent to disturbed communities. The VVWRA facility and associated waste/reclaimed water detention basins are located half a mile to the east of the Solar Field Area and along the Gen-Tie Line. The High Desert Power Plant lies adjacent to the High Desert Power Project's Caldwell Substation.

4.2.4 Plants

Plant species observed in the project boundaries were characteristic of desert scrub and disturbed communities in the region. Common species included creosote bush, burrobrush, allscale (*Atriplex polycarpa*), Joshua tree, bristly fiddleneck (*Amsinckia tessellata*), Nevada tea, branched pencil cholla (*Cylindropuntia ramosissima*), California buckwheat, and Cooper's boxthorn (*Lycium cooperi*). All plant species observed in the project boundaries from 2017 to 2018 are listed in Appendix C.

Most of the areas within the project boundaries contained creosote bush scrub and gravelly, sandy soil, which has the potential to harbor special-status plant species. Washes and roadcuts were also present within the project boundaries and can also provide suitable habitat for special-status plants.

4.2.5 Wildlife

Wildlife species observed or detected within the project boundaries were characteristic of desert scrub and disturbed communities in the region. Common reptile species observed throughout the project included zebra-tailed lizard (*Callisaurus draconoides*), side-blotched lizard (*Uta stansburiana*), long-nosed leopard lizard (*Gambelia wislizenii*), western whiptail (*Aspidoscelis tigris*), red racer (*Coluber flagellum piceus*), and gopher snake (*Pituophis melanoleucus*). Bird species that were commonly observed include common raven (*Corvus corax*), mourning dove (*Zenaidura macroura*), black-throated sparrow (*Amphispiza bilineata*), horned lark (*Eremophila alpestris*), cactus wren (*Campylorhynchus brunneicapillus*), and loggerhead shrike (*Lanius ludovicianus*). Common mammal species observed included white-tailed antelope squirrel (*Ammospermophilus leucurus*), desert cottontail (*Sylvilagus auduboni*), black-tailed jackrabbit (*Lepus californicus*), and coyote (*Canis latrans*). All wildlife species observed or detected in the project boundaries are listed in Appendix D.

4.2.6 Raptors and Migratory Birds

Potential nesting habitat for migratory birds was present within vegetation in the project boundaries, including Joshua trees and creosote bushes, cholla cactus, and within abandoned structures. Areas adjacent to the project boundaries, including power poles and industrial buildings, also provided nesting habitat for migratory birds and raptors.

4.2.7 Wildlife Movement Corridors and Linkages

The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species from one area of habitat to another. The definition of a corridor varies, but corridors include greenbelts, refuge systems, underpasses, and biogeographic land bridges, for example. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix, which connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survival of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides the potential for genetic exchange between wildlife populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. Naturally, the extent of corridor use and wildlife movement patterns varies greatly among species.

The project currently provides wildlife movement opportunities because it consists of open and relatively unimpeded land. However, it would not be considered a wildlife movement corridor that would need to be preserved to allow wildlife to move between important natural habitat areas due to the lack of conserved natural lands in the vicinity and the project's proximity to industrial and residential areas. The project boundaries are also mostly surrounded by additional open unimpeded land, functioning as a single contiguous block of habitat rather than a corridor. The area within the project boundaries is exposed and does not contain any major features that would be considered critical movement corridors for wildlife. Although the dirt roads and desert washes located within the project boundaries are likely utilized by wildlife moving through the area, these features would not be considered necessary linkages

between conserved natural habitat areas or critical for wildlife movement because of the nearby open space surrounding the project. Existing development in the vicinity of the project, the Mojave River located to the east, and presence of anthropogenic uses throughout the area (e.g., trash dumping, OHV use) further limit ability for wildlife to use the project for travel and regional movement.

4.3 Mohave Ground Squirrel Habitat Assessment

ECORP biologist Phillip Wasz, Authorized Field Investigator under CDFW MOU for Mohave Ground Squirrel trapping studies, conducted the Mohave ground squirrel habitat assessment within the project boundaries on March 23 and 24, 2017 and April 18, 2018, and within the 49-acre project addition on October 9, 2018.

The survey area that was assessed for Mohave ground squirrel habitat consisted of the project boundaries (Solar Field Area, Preferred Gen-Tie Alignment, and Alternative Gen-Tie Alignment, as defined in Section 1.4) and consisted of approximately 677.34 acres (note that this was a survey area only and the acreage does not correlate with the project impact area acreage, which is presented under a separate cover [ECORP 2018b]). Except for the disturbed/developed areas (comprising 64.54 acres), most of the survey area (612.80 acres) provides suitable habitat for Mohave ground squirrel (Figure 9). The site supports relatively undisturbed desert scrub vegetation that consistently contained the two plant species typically associated with Mohave ground squirrel presence, spiny hopsage and winter fat (winter fat in the project boundaries is shown in Figure 10). While these two species are known to be associated with Mohave ground squirrel, presence of these species does not necessarily indicate presence of Mohave ground squirrel. Other species observed include creosote bush, allscale, Cooper's boxthorn, Joshua tree, and various species of cactus (e.g., *Opuntia* spp., *Cylindropuntia* spp.), none of which preclude Mohave ground squirrel from occurring. Soils on site are friable and range from sandy to rocky, with small mammal burrows prevalent throughout the project boundaries. Topography within the project boundaries was mostly flat with some southern portions containing rolling hills and slopes. There are no excessively steep or rocky outcrops within the project boundaries.

The Mohave ground squirrel habitat assessments completed in March 2017 and April 2018 were conducted during what is considered to be the animal's most active time above ground according to the trapping protocol (CDFW 2010). Mohave ground squirrel were neither aurally detected nor visually observed. The Mohave ground squirrel habitat assessment conducted in October 2018 for the additional 49-acre area was conducted outside of the time that Mohave ground squirrel are active and above ground; consequently, Mohave ground squirrel were neither aurally detected or visually overserved during the October 2018 survey.

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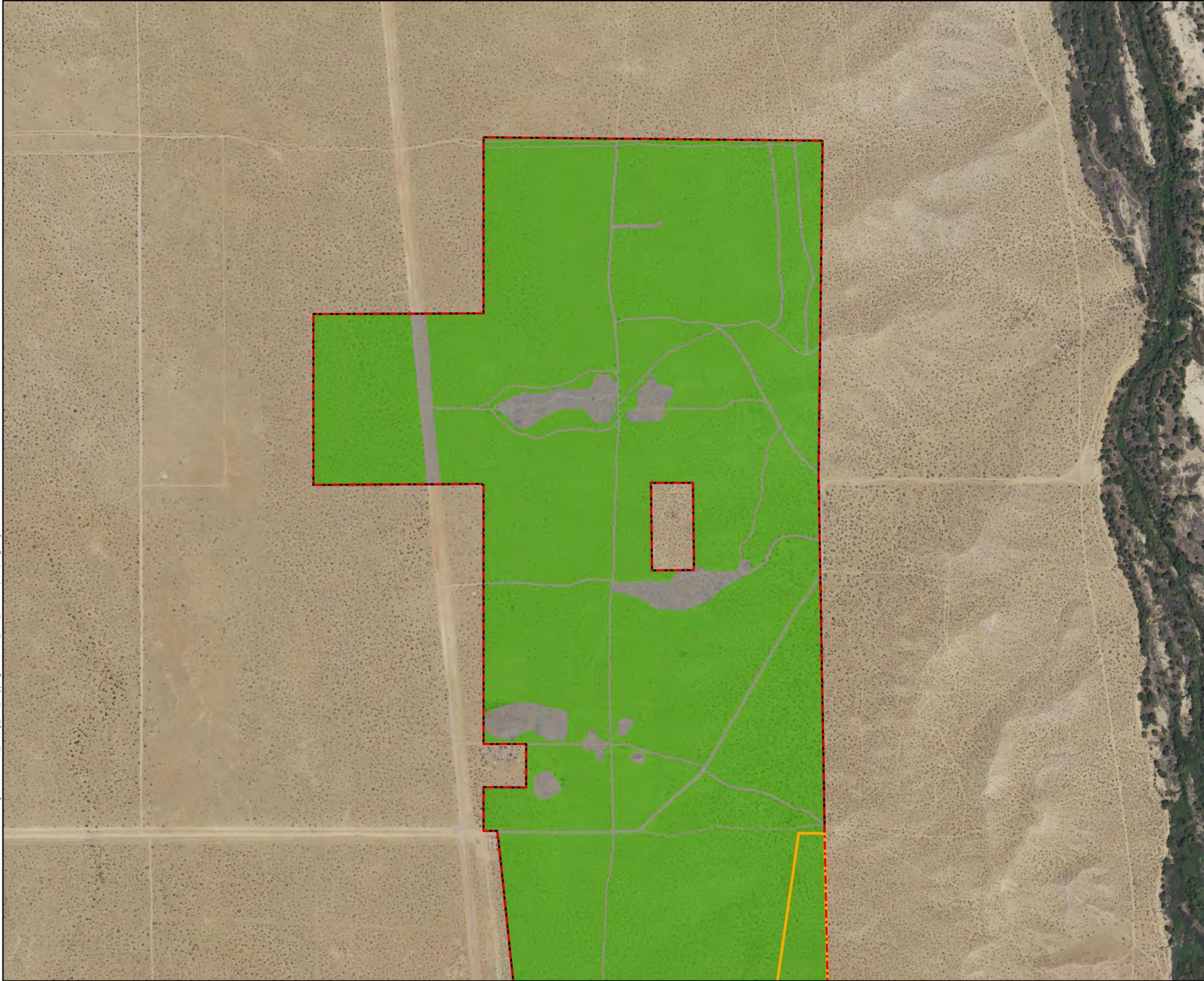
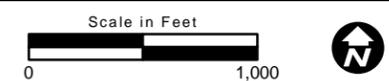
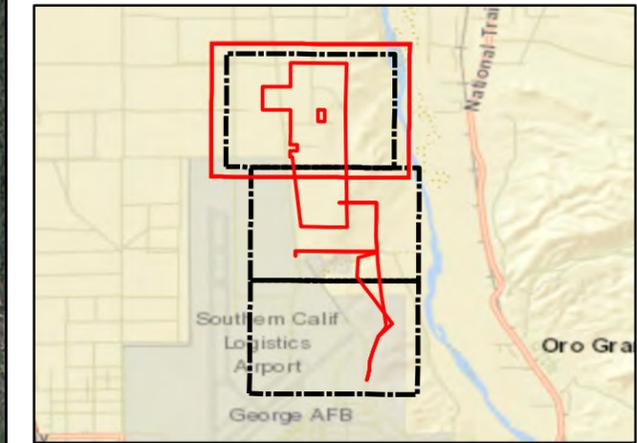


Figure 7.
Mohave Ground Squirrel Habitat
Sheet 1

Map Features

-  Mohave Ground Squirrel Habitat Assessment Area
 -  Project Boundaries
 -  49-Acre Project Addition
- Mohave Ground Squirrel Habitat**
-  High
 -  Unsuitable

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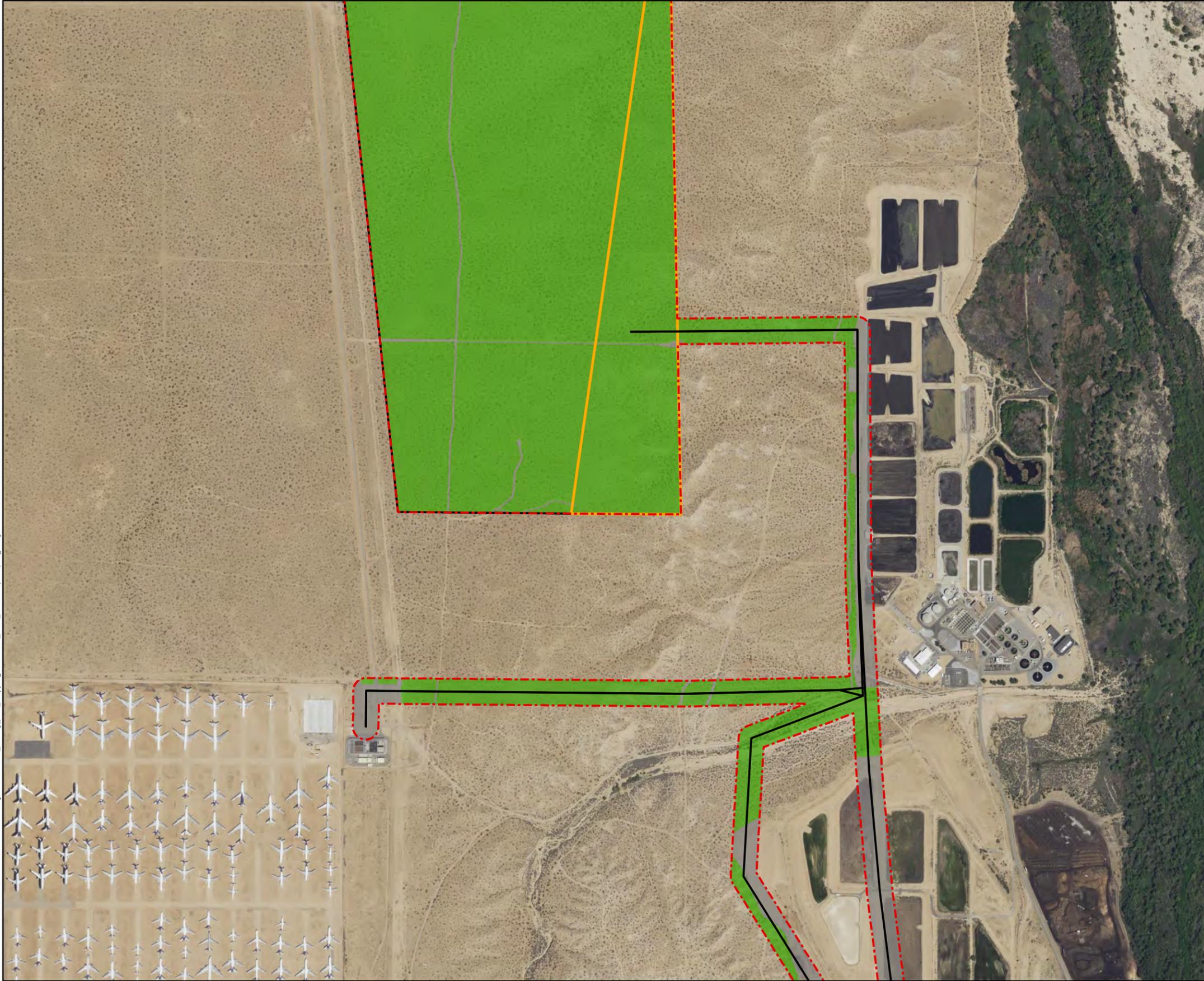
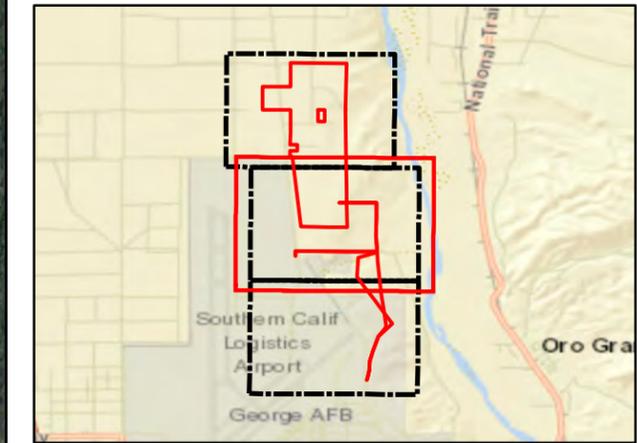


Figure 7.
Mohave Ground Squirrel Habitat
Sheet 2

Map Features

-  Mohave Ground Squirrel Habitat Assessment Area
 -  Project Boundaries
 -  49-Acre Project Addition
- Mohave Ground Squirrel Habitat**
-  High
 -  Unsuitable

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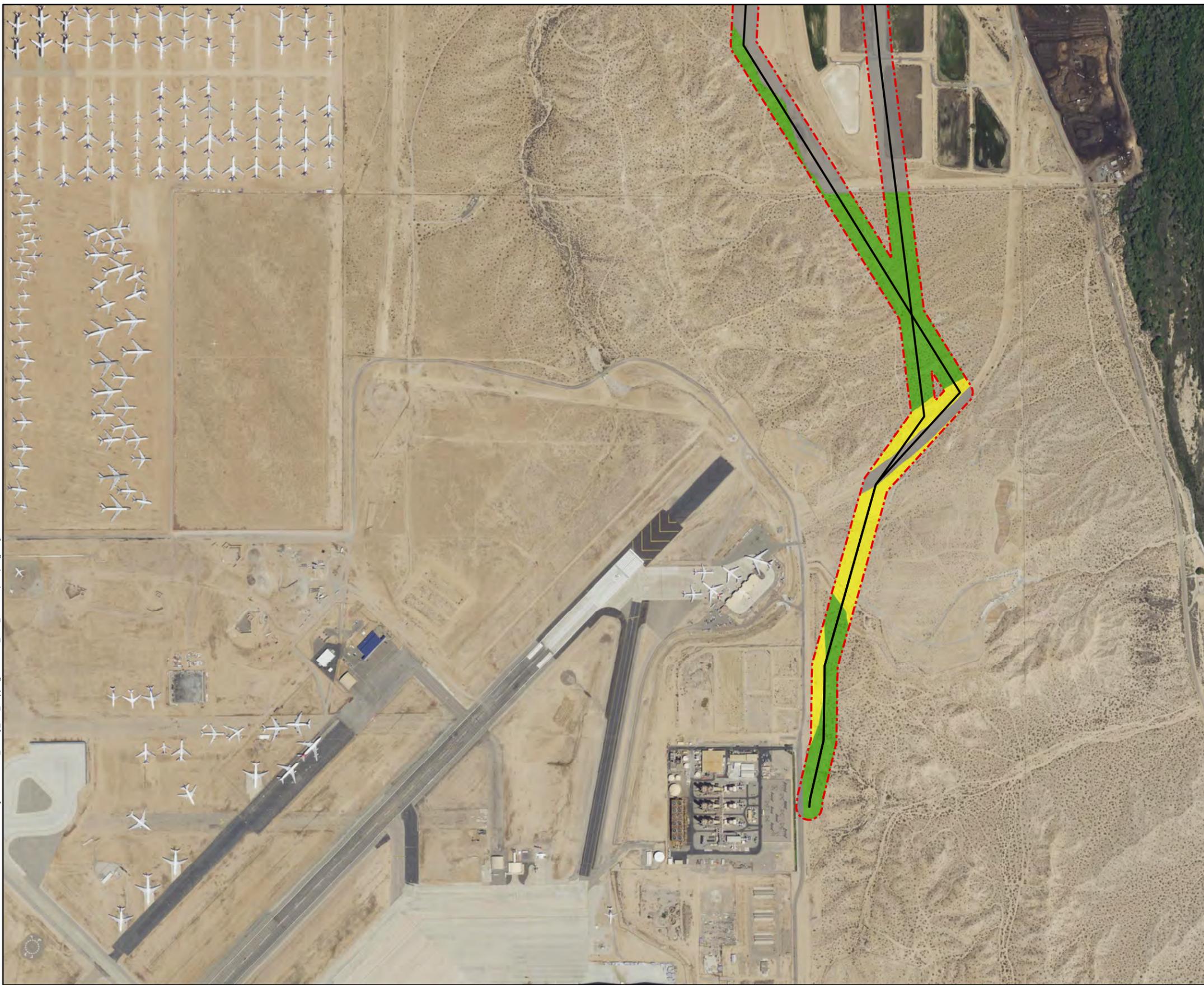


Figure 7.
Mohave Ground Squirrel Habitat
Sheet 3

Map Features

-  Mohave Ground Squirrel Habitat Assessment Area
-  Project Boundaries

Mohave Ground Squirrel Habitat

-  High
-  Low
-  Unsuitable

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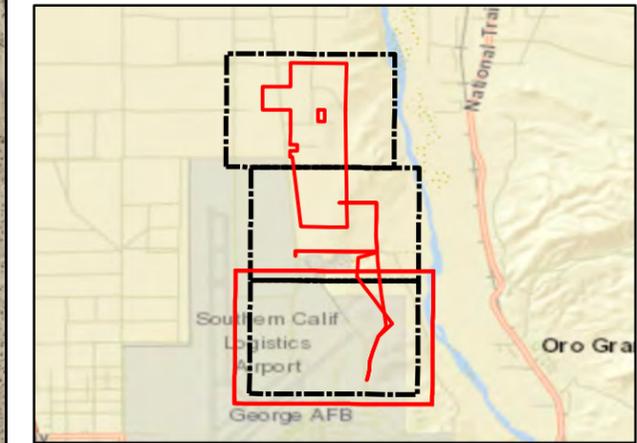




Figure 10. Winter fat found in the project boundaries.

4.4 Focused and Protocol Surveys

4.4.1 *Special-Status Plants*

Reference Population Assessments

Reference population locations for Beaver Dam breadroot, Mojave monkeyflower, and Booth's evening-primrose were visited prior to conducting surveys for the project. However, the reference populations visited were not viable (i.e., none of the plants were observed); therefore, the typical blooming period and overall status of desert blooming plants were taken into consideration when planning surveys. Reference populations visited are listed in Table 8 and show their CNPS California Rare Plant Rank (CRPR).

Table 8. Reference Populations Visited in 2017 and 2018				
Date Visited	Scientific Name	Common Name	Status*	Location
4/6/2017	<i>Pediomelum castoreum</i>	Beaver Dam breadroot	CRPR 1B.2	NE of 14454 Turner Road Victorville, CA 92394
4/6/2017	<i>Diplacus mohavensis</i>	Mojave monkeyflower	CRPR 1B.2	SE of 15030 Bryman Rd Oro Grande, CA 92368
4/6/2017	<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening- primrose	CRPR 2B.3	Bell Mountain Wash, NW of Abbey Lane, Victorville, CA 92394
4/5/2018	<i>Pediomelum castoreum</i>	Beaver Dam breadroot	CRPR 1B.2	NE of 14454 Turner Road Victorville, CA 92394
4/5/2018	<i>Diplacus mohavensis</i>	Mojave monkeyflower	CRPR 1B.2	SE of 15030 Bryman Rd Oro Grande, CA 92368
4/5/2018	<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening- primrose	CRPR 2B.3	Bell Mountain Wash, NW of Abbey Lane, Victorville, CA 92394

*CRPR – California Native Plant Society Rare Plant Rank

Figure 11 shows the locations of the reference populations and when they were visited. It is likely that urban, industrial development, and/or flooding from powerful storm events in 2017, and below average rainfall in 2018 affected the presence of these species since they were first identified at the reference locations in the CNDDDB.

Focused, Protocol-Level Special-Status Plant Surveys

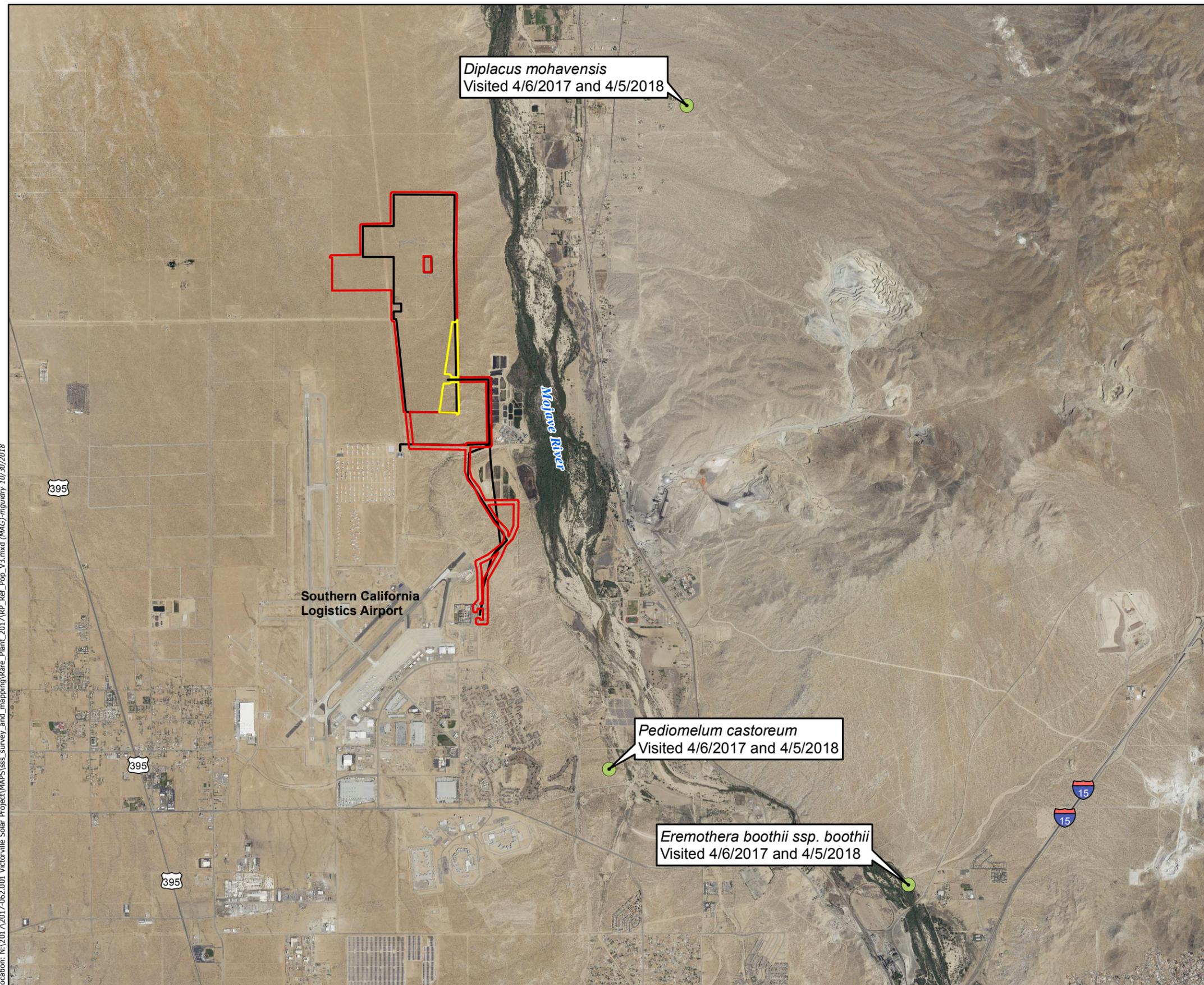
The focused, protocol-level special-status plant surveys were conducted by ECORP biologists in April and May of 2017 and 2018. Greg Hampton was the lead surveyor, with technical oversight provided by Joshua Corona-Bennett. Representative photographs taken during the surveys are included in Appendix B; all plant species observed during the surveys and during the special-status plant habitat assessment are included in Appendix C; and the field data sheets, list of survey personnel, and time and weather conditions at the start and end of each survey day, including the special-status plant habitat assessment, are included in Appendix E.

Ten species were determined to be target species for the surveys: Mojave fishhook cactus, Mojave monkeyflower, white pygmy-poppy, Beaver Dam breadroot, small-flowered androstephium, Booth's evening-primrose, Barstow woolly sunflower, sagebrush loeflingia, desert cymopterus, and short-joint beavertail cactus (see Table 2); however, the only special-status plant species that was documented within the project boundaries were two specimens of Coves' cassia (*Senna covesi*) in 2017, and an additional individual of Coves' cassia in 2018. Coves' cassia is a perennial herb with no federal or state protections but is a CRPR Rank 2B.2 species (rare, threatened, or endangered in California but more common elsewhere). All occurrences of Coves' cassia were found on the southern portion of the project boundaries (Figure 12). An example of one of the Coves' cassia specimens is shown on Figure 13.

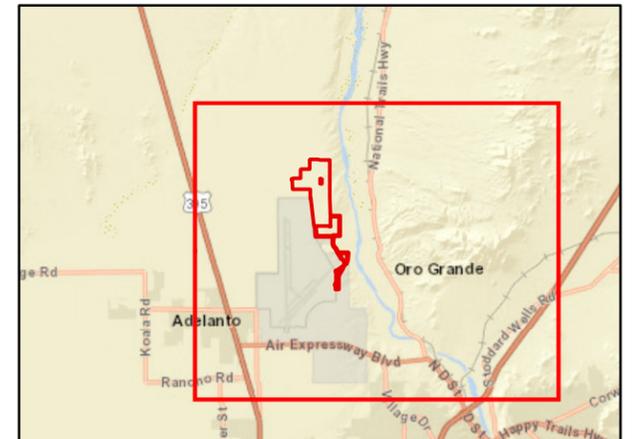
**Figure 11.
Reference Population Sites**

Map Features

- Special-Status Plant Survey Area Boundary (100')
- Special-Status Plant Habitat Assessment Area
- Project Boundaries
- Reference Population



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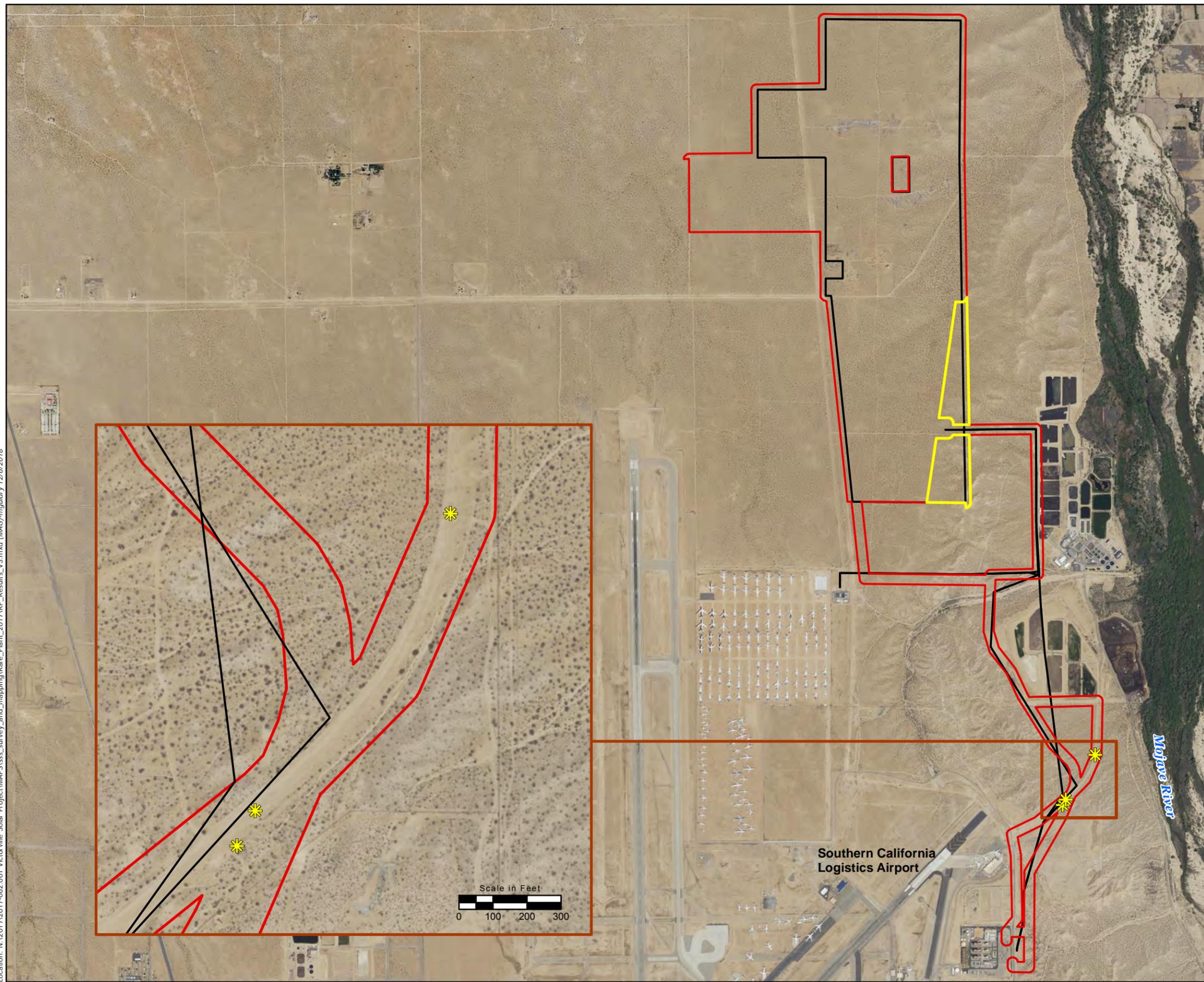
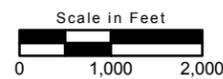
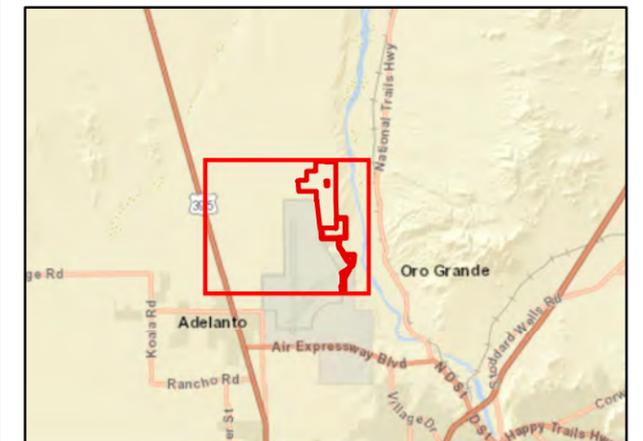


Figure 13.
Special-Status Plant Results

Map Features

-  Special-Status Plant Survey Area Boundary (100')
-  Rare Plant Habitat Assessment Area
-  Project Boundaries
-  *Senna covesii*

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Figure 13. Coves' cassia (*Senna covesii*) found within the southern portion of the project boundaries.

Meteorological Conditions

Multiple weather stations were reviewed for the project, however only the Brentwood KCAVICTO8 station had annual precipitation data (www.wunderground.com) (2018). Between October 1 and July 1, the Brentwood weather station, located less than 10 miles southeast of the project boundaries, recorded precipitation at 0.79 inch in 2017-2018, 6.78 inches in 2016-2017, 2.56 inches in 2015-2016, and 0 inches in 2014-2015. The average annual precipitation for this area is 5.27 inches according to local weather data (www.usclimatedata.com) (2018).

Special-Status Plant Habitat Assessment: 49-Acre Project Addition

The special-status plant habitat assessment was conducted by ECORP biologist Greg Hampton on October 9, 2018. The same 10 target plant species identified as those with the potential for occurrence for the focused special-status plant survey conducted in spring 2018 were targeted for the special-status plant habitat assessment. No special-status plant species or evidence of presence (i.e., dried skeletons) of special-status plant species were observed. The 49-acre additional area provided the same quality of suitable habitat for special-status plant species as the other areas surveyed for the project. All common plant species observed within the Special-Status Plant Habitat Assessment Area were also observed within the Special-Status Plant Survey Area.

Cactus and Joshua Tree Inventory

In addition to Joshua trees, the cactus species that were observed in the Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area include: silver cholla (*Cylindropuntia echinocarpa*),

branched pencil cholla (*Cylindropuntia ramosissima*), and beavertail cactus (*Opuntia basilaris* var. *basilaris*). The results of the 2017 and 2018 inventory for these species are presented below.

Data from the 2017 desktop analysis based on aerial imagery estimated that approximately 188 Joshua tree individuals were within the portion of the area surveyed in 2017. Additionally, it was estimated that cholla occurred at 0.10 specimens per acre, which equates to approximately 33 specimens (or 17 specimens of each cholla species) present on the portion of the area surveyed in 2017. The beavertail cactus was estimated to occur at 0.02 specimens for every acre, or approximately 7 specimens occurring on the portion of the area surveyed in 2017. All three cactus species were observed integrating with one another at locations within Mojave creosote bush scrub vegetation community on the western half of the portion of the area surveyed in 2017.

The 2018 surveys involved collecting GPS points for every Joshua tree and cactus species observed. This method was used to determine the true abundance of Joshua trees and cactuses on the portion of the Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area surveyed in 2018. The 2018 GPS inventory reported 164 Joshua trees, 788 branched pencil cholla, 34 silver cholla, and 2 beavertail cactuses observed within the area surveyed in 2018 and the Special-Status Plant Habitat Assessment Area. Joshua trees and cactus species were observed throughout Mojave creosote bush scrub habitat during surveys conducted in 2018, with some higher and lower concentrations in certain areas. Furthermore, the 2018 GPS inventory included survey areas with more suitable habitat for Joshua trees and cactus species that resulted in a much higher abundance of these plant species.

The final Special-Status Plant Survey Area and Special-Status Plant Habitat Assessment Area includes both the 2017 desktop inventory areas and the 2018 GPS inventory areas. As a result, a combination of both the 2017 desktop and 2018 GPS inventories were used to estimate the total number of Joshua trees and cactus species within the project boundaries. It is assumed that 352 Joshua trees, 805 branched pencil cholla, 51 silver cholla, and 9 beavertail cactuses occur within the project boundaries. Table 9 provides the estimated and reported abundance of each species during the 2017 and 2018 surveys, as well as the total assumed abundance for the project boundaries.

Table 9. Cactus and Joshua Tree Inventory	
2017 Desktop Inventory	
Species	Estimated Abundance in Project Boundaries
Joshua tree	188
branched pencil cholla	17
silver cholla	17
beavertail cactus	7
2018 GPS Inventory	
Species	Recorded Abundance in Project Boundaries
Joshua tree	164
branched pencil cholla	788
silver cholla	34
beavertail cactus	2
Total Project Inventory*	
Species	Assumed Abundance in Boundaries Area
Joshua tree	352
branched pencil cholla	805
silver cholla	51
beavertail cactus	9

*based on 2017 desktop and 2018 GPS inventories

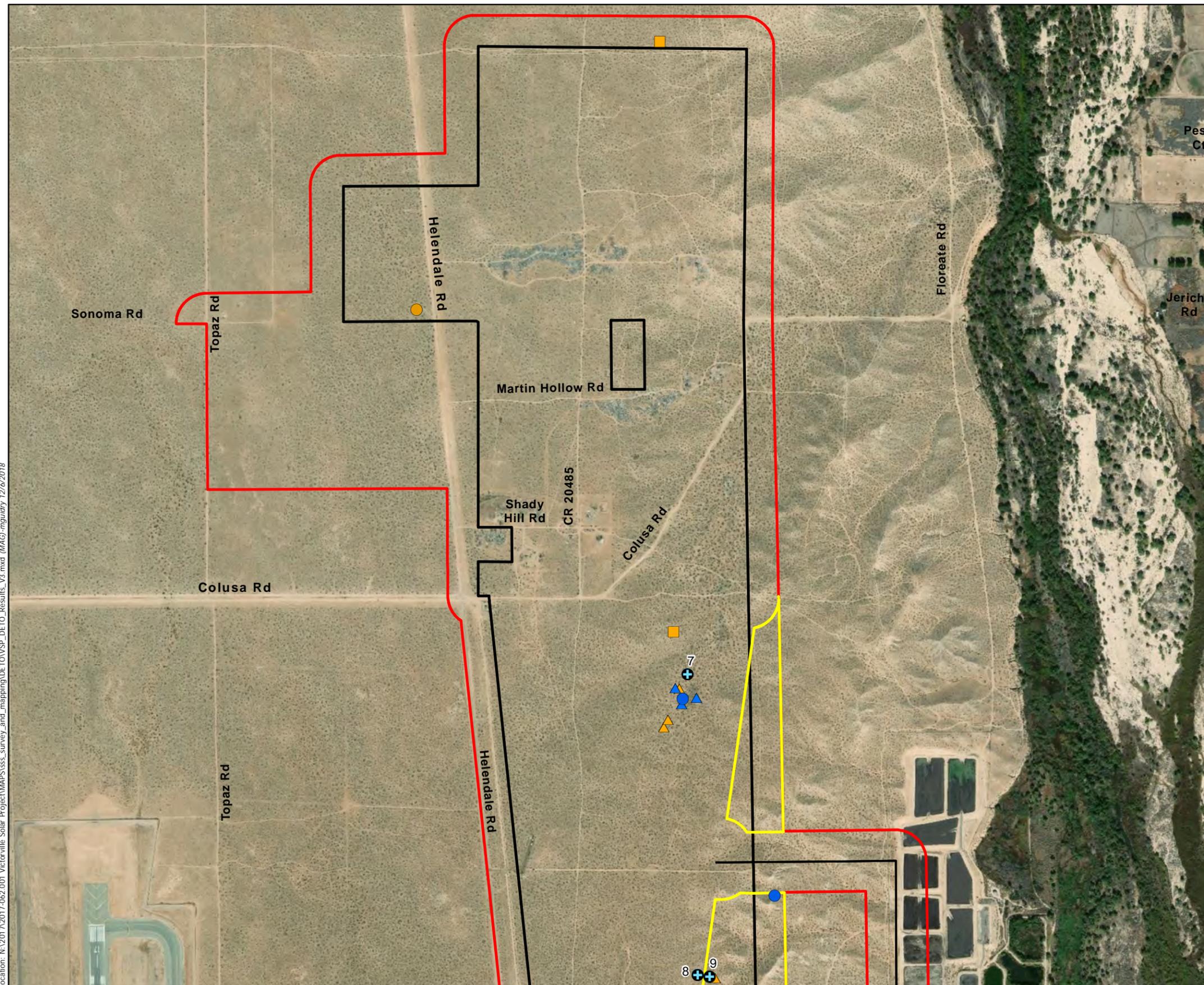
4.4.2 Desert Tortoise

Protocol desert tortoise surveys were conducted within the Desert Tortoise Survey Area (the project boundaries plus a 300-foot buffer) by ECORP biologists in 2017 and 2018. Representative photographs taken during the survey are included in Appendix B; all wildlife species observed during the survey are included in Appendix D; and the field data sheets, list of survey personnel, and time and weather conditions at the start and end of each survey day are included in Appendix F. Figure 14 shows the locations of all live desert tortoises and desert tortoise sign observed during the protocol desert tortoise surveys and incidentally observed during other focused surveys. Table 10 summarizes the results of the desert tortoise sign observed during the surveys.

Live Desert Tortoises Observed During Protocol Desert Tortoise Survey

A total of five live desert tortoise observations were documented in the Desert Tortoise Survey Area during protocol surveys; two within the Solar Field Area and three outside the project boundaries. There were no live desert tortoise observations within the Preferred or Alternative Gen-Tie Alignments. On April 12, 2017, a single hatchling desert tortoise was observed west of the VVWRA facility during the protocol desert tortoise surveys (Figure 14, Live Tortoise 1; Figure 15). On May 2, 2017, two adult tortoises were observed mating during protocol desert tortoise surveys west of the proposed Gen-Tie Line (Figure 14, Live Tortoises 2 and 3; Figure 16). On May 16, 2018, during the protocol desert tortoise survey, a large adult tortoise of unknown sex was observed inside a burrow near the southeastern-most corner of the Solar Field Area (Figure 14, Live Tortoise 8).

Figure 14.
Desert Tortoise Survey Results
Sheet 1



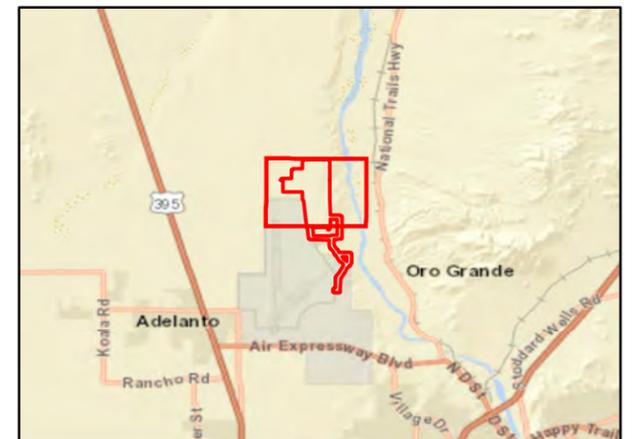
Map Features

- Desert Tortoise Survey Area (300' Buffer)
- 49-Acre Project Addition Survey Area
- Project Boundary

Desert Tortoise Results

- + Live Tortoise
- Burrow (Class 1-2)
- Burrow (Class 3-5)
- ▲ Scat (Class 1-2)
- ▲ Scat (Class 3-5)
- Carcass (Class 5)

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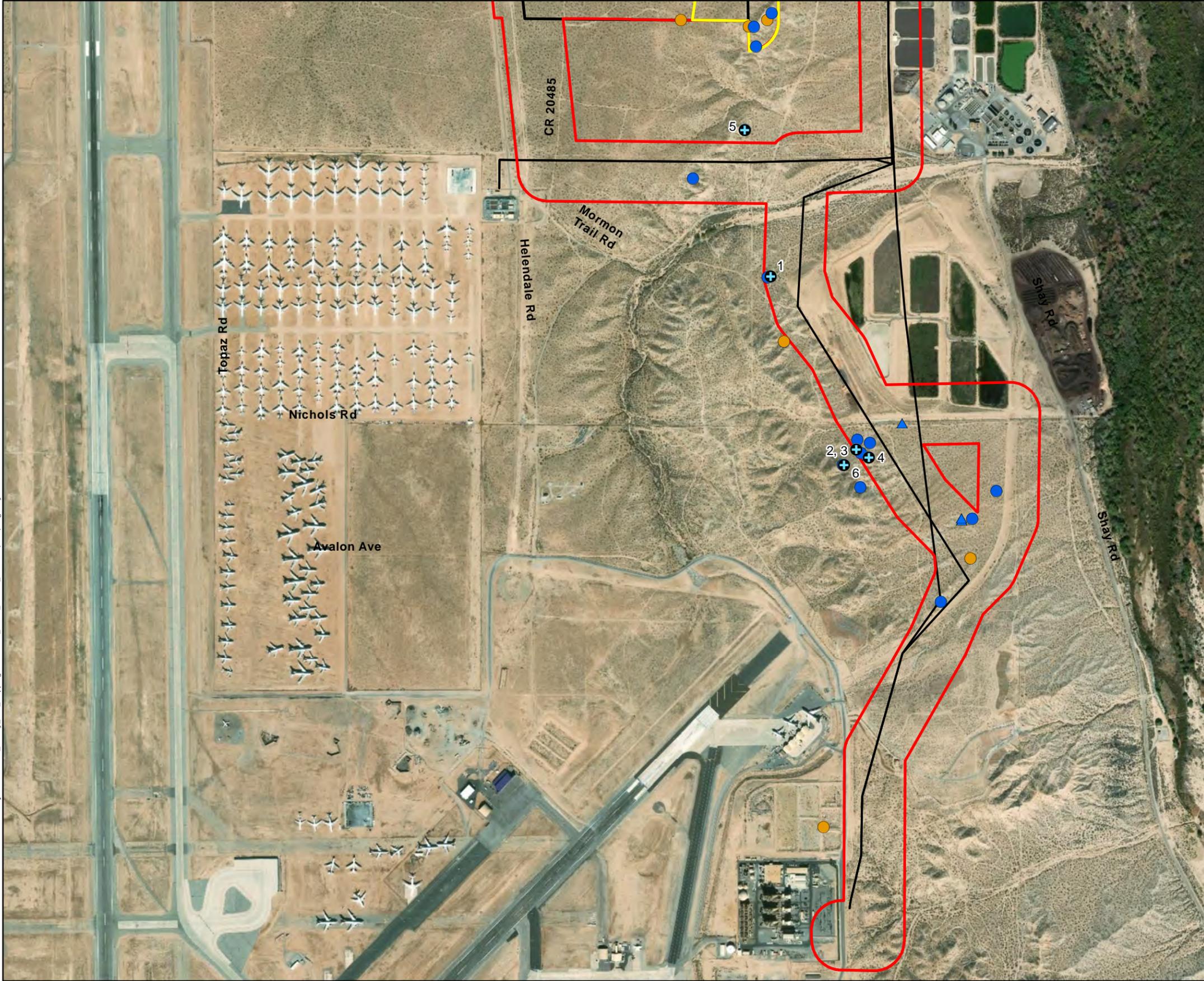


Figure 14.
Desert Tortoise Survey Results
Sheet 2

Map Features

- Desert Tortoise Survey Area (300' Buffer)
- 49-Acre Project Addition Survey Area
- Project Boundary

Desert Tortoise Results

- + Live Tortoise
- Burrow (Class 1-2)
- Burrow (Class 3-5)
- ▲ Scat (Class 1-2)

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Figure 15. Juvenile desert tortoise observed near the southwest project boundaries near the VVWRA facility.



Figure 16. Adult desert tortoises mating west of the proposed Gen-Tie Line.

On October 9, 2018, an adult female desert tortoise was observed just outside of a burrow along the southeastern-most corner of the Solar Field Area (Figure 14, Live Tortoise 9). This observation was within 125 feet of the tortoise observed on May 16, 2018 and was the same approximate size; it is possible that it was the same individual.

Desert Tortoise Sign Observed During Protocol Desert Tortoise Survey

A total of 26 burrows were observed during the protocol desert tortoise survey, of which, five were located within the Solar Field Area and 21 were located outside of the project boundaries. There were no burrows identified within the Preferred or Alternative Gen-Tie Lines. Nineteen pieces of scat were documented during the protocol desert tortoise survey, of which, 11 were within the Solar Field Area and eight were outside of the project boundaries. There were no pieces of scat documented within the Preferred or Alternative Gen-Tie Lines.

Most of the scat identified during the protocol desert tortoise survey was either Class 1 or Class 2, indicating that they had been deposited relatively recently. However, older desert tortoise scat (Class 3 to 5) was also identified near (within 30 feet) three of the active Class 1 burrows, indicating that the burrows and surrounding area had been occupied by desert tortoise in previous years.

One Class 5 carcass was observed within the Solar Field Area during the protocol desert tortoise survey. The carcass was old, disarticulated, and scattered into several pieces.

Live Desert Tortoises Incidentally Observed During Other Surveys

Four live desert tortoises were incidentally observed during other focused surveys: one within the Solar Field Area and three outside the project boundaries. There were no live desert tortoise observations within the Preferred or Alternative Gen-Tie Alignments. On June 6 and June 30, 2017 during focused burrowing owl surveys, two adult tortoises were observed in the same vicinity of where the mating tortoises were observed on May 2, 2017 (Figure 14, Live Tortoises 4 and 6). The tortoise observed on June 6, 2017 was male, and the sex of the tortoise observed on June 30, 2017 could not be identified as the tortoise was fully submerged in a burrow. It is possible that one or both individuals were also observed mating on May 2, 2017. On June 29, 2017, during focused burrowing owl surveys, an adult female desert tortoise was incidentally observed outside the project boundaries inside a burrow along a hillside west of the VVWRA facility (Figure 14; Live Tortoise 5). On May 9, 2018, during the special-status plants survey, an adult female desert tortoise was observed foraging within areas of dense pencil cholla along the eastern end of the project boundary (Figure 14; Live Tortoise 7).

Desert Tortoise Sign Incidentally Observed During Other Surveys

A total of five burrows were incidentally observed during other surveys, one of which was located within the Preferred Gen-Tie Alignment and the remaining were located outside of the project boundaries. The one burrow located within the Preferred Gen-Tie Alignment was a Class 2 burrow. Three pieces of scat were incidentally observed, all of which were Classes 1 and 2. One piece of scat was found within the Solar Field Area and the rest were documented outside the project boundaries. One Class 5 carcass was incidentally observed outside the project boundaries. This carcass was also old, disarticulated, and scattered into several pieces.

Table 10. Desert Tortoise and Sign Observations						
Desert Tortoise Feature	Type of Observation	Location				Total #
		Within Solar Field Area	Within Preferred Gen-Tie Alignment	Within Alternative Gen-Tie Alignment	Outside Project Boundaries	
Live Tortoise	During Protocol Survey	2	0	0	3	5
	Incidentally Observed	1	0	0	3	4
	Total	3	0	0	6	9
Burrow (Class 1-2)	During Protocol Survey	3	0	0	14	17
	Incidentally Observed	0	1	0	3	4
	Total	3	1	0	17	21
Burrow (Class 3-5)	During Protocol Survey	2	0	0	7	9
	Incidentally Observed	0	0	0	1	1
	Total	2	0	0	8	10
Scat (Class 1-2)	During Protocol Survey	5	0	0	8	13
	Incidentally Observed	1	0	0	2	3
	Total	6	0	0	10	16
Scat (Class 3-5)	During Protocol Survey	6	0	0	0	6
	Incidentally Observed	0	0	0	0	0
	Total	6	0	0	0	6
Carcass (Class 5)	During Protocol Survey	1	0	0	0	1
	Incidentally Observed	0	0	0	1	1
	Total	1	0	0	1	2
Desert Tortoise Sign Classification						
BURROWS		SCAT				
1 - Currently active, w/ tortoise or active sign		1 - Wet or freshly dried, obvious odor				
2 - Good condition, definitely tortoise, no evidence of recent use		2 - Dry w/ glaze and some odor, no bleaching, dark brown				
3 - Deteriorated condition, definitely tortoise		3 - Dry w/o glaze or odor, light brown, tightly packed, signs of bleaching				
4 - Good condition, possibly tortoise		4 - Dry, very light brown to yellow, loose material; scaly				
5 - Deteriorated condition, possibly tortoise		5 - Bleached or consisting only of plant fiber				
CARCASS		4 - Shell bones falling apart; growth rings on scutes are peeling				
1 - Fresh or putrid		5 - Disarticulated and scattered				
2 - Normal color, scutes adhered to bone						
3 - Scutes peeled off bone						

4.4.3 Burrowing Owl

Focused Breeding Season Surveys

The focused burrowing owl breeding season surveys were conducted by ECORP biologists in 2017 and 2018. Representative photographs taken during the survey are included in Appendix B; all wildlife species observed during the survey are included in Appendix D; and the field data sheets, list of survey personnel, and time and weather conditions at the start and end of each survey day are included in Appendix G. A summary of the results of the burrowing owl sign observed during the focused breeding season surveys is presented in Table 11. Figure 17 shows the locations of all potential and occupied burrows observed during the focused burrowing owl surveys.

No live burrowing owls were observed during the focused surveys. A total of 60 occupied burrows (exhibiting sign of burrowing owl use such as whitewash, feathers, pellets, and/or bones of prey items) were documented; of which, 27 were within the Solar Field Area and 33 were outside the project boundaries. Although these burrow locations were considered occupied, burrowing owl individuals or pairs were not associated with these burrow locations at the time of the surveys. Therefore, these burrow locations were not classified as active. Of the 50 potential burrows identified (burrows of suitable size and shape but exhibiting no sign of burrowing owl use), 14 were within the Solar Field Area, one was within the Alternative Gen-Tie Alignment, and 35 were outside the project boundaries. Figure 18 shows a photograph of a potential burrowing owl burrow observed during the surveys.

Burrowing Owl Habitat Assessment and Burrow Survey: 49-Acre Project Addition

A summary of the results of the burrowing owl and sign observed during the habitat assessment and burrow survey is presented in Table 11. Figure 17 shows the locations of the live owl and all potential and occupied burrows observed during the habitat assessment and burrow survey.

During the burrowing owl habitat assessment and burrow survey of the 49-acre project addition, a single live adult burrowing owl was observed within the Solar Field Area. The owl flushed from beneath a creosote bush but could not be associated with any specific nearby burrow at the time of the survey. Due to the timing of the survey, it was likely this individual was migrating through.

An additional 11 occupied burrows were identified outside the project boundaries. Eleven potential burrows were identified during the burrowing owl habitat assessment and burrow survey; of which, three were located within the Solar Field Area and eight were outside the project boundaries.

There were no burrowing owls or burrowing owl sign incidentally observed during other focused surveys.

Table 11. Results of Focused Burrowing Owl Surveys and Burrowing Owl Habitat Assessment and Burrow Surveys						
Burrowing Owl Feature	Type of Observation	Location				Total #
		Within Solar Field Area	Within Preferred Gen-Tie Alignment	Within Alternative Gen-Tie Alignment	Outside Project Boundaries	
Live Burrowing Owl	During Focused Survey	0	0	0	0	0
	During Habitat Assessment	1	0	0	0	1
	Total	1	0	0	0	1
Occupied Burrow Location (with sign)	During Focused Survey	27	0	0	33	60
	During Habitat Assessment	0	0	0	11	11
	Total	27	0	0	44	71
Potential Burrow Location (no sign)	During Focused Survey	14	0	1	35	50
	During Habitat Assessment	3	0	0	8	11
	Total	17	0	1	43	61

Location: N:\2017\2017-062.001 Victorville Solar Project\MAPS\ss_survey_and_mapping\BUOWVSP_BUOWV_Results_V3.mxd (MAG) mguidry 10/25/2018

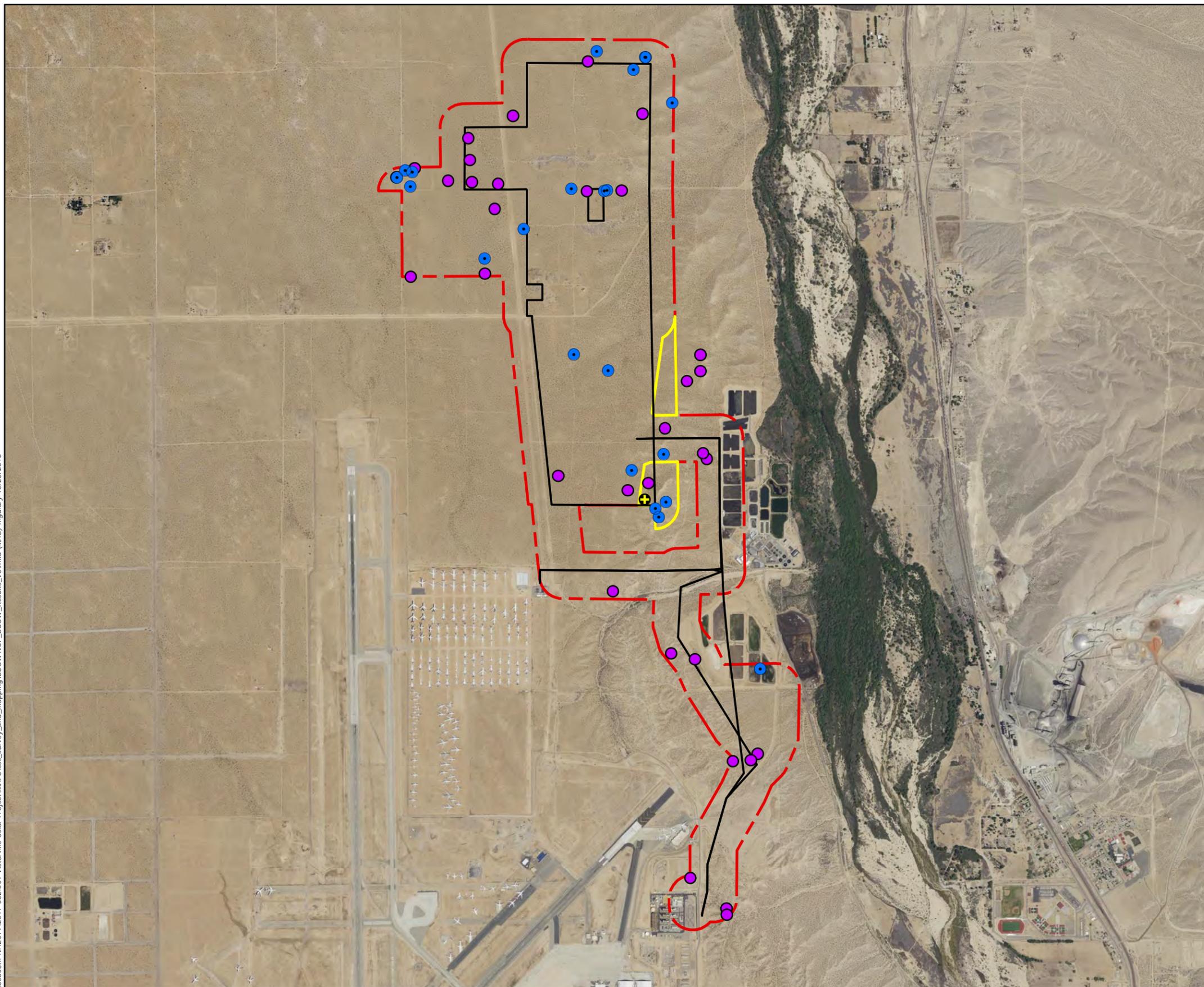


Figure 17.
Burrowing Owl Survey Results

Map Features

 Burrowing Owl Survey Area (500' Buffer)

 Burrowing Owl Habitat Assessment

 Project Boundary

Burrowing Owl Results

 Observation

 Occupied Burrow (with Sign)

 Potential Burrow (No Sign)

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

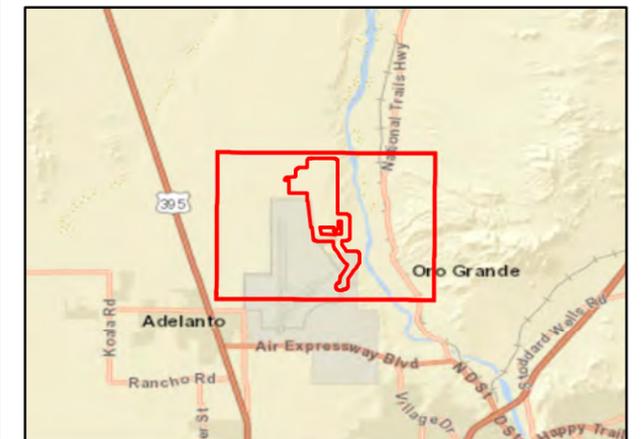




Figure 18. Potential burrowing owl (no sign) in the project boundaries.

4.5 Incidental Sensitive Biological Resources

Six special-status wildlife species, including five bird and one mammal species, were incidentally observed within the project boundaries and in the surrounding areas during the focused special-status plant, desert tortoise, and burrowing owl surveys: Swainson’s hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), peregrine falcon (*Falco peregrinus*), loggerhead shrike (*Lanius ludovicianus*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), and desert kit fox. The locations of where these sensitive species were observed are included in Figure 19.

4.5.1 Special-Status Birds

All special-status bird species incidentally observed during the focused special-status plant, desert tortoise, and burrowing owl surveys were documented. A brief summary of these observations is included below; however, more detailed information pertaining to these findings can be found in Appendix H.

A Swainson’s hawk, a state-listed Threatened species, was observed soaring high above the northwest portion of the project boundaries, likely along a migration route.

A northern harrier, a CDFW SSC and protected by the MBTA, was observed foraging within the project boundaries.

A peregrine falcon, a CDFW Fully Protected species, was observed flying and perched on a Joshua tree south of the Solar Field Area eating a prey item.

Loggerhead shrikes, a CDFW SSC, were observed throughout the northern portion of the project boundaries. A total of four individuals were observed in four locations during the burrowing owl surveys.

One loggerhead shrike individual that was observed appeared to be a fledgling, indicating that a pair had nested on or near the project boundaries.

A yellow-headed blackbird, a CDFW SSC, was observed flying by within the northeastern project boundaries.

Location: N:\2017\2017-062\001_Victorville_Solar_Project\MAPS\ss_survey_and_mapping\Incidental\NISP_Incidental_Results_V3.mxd (MAG) mguidry 10/25/2018

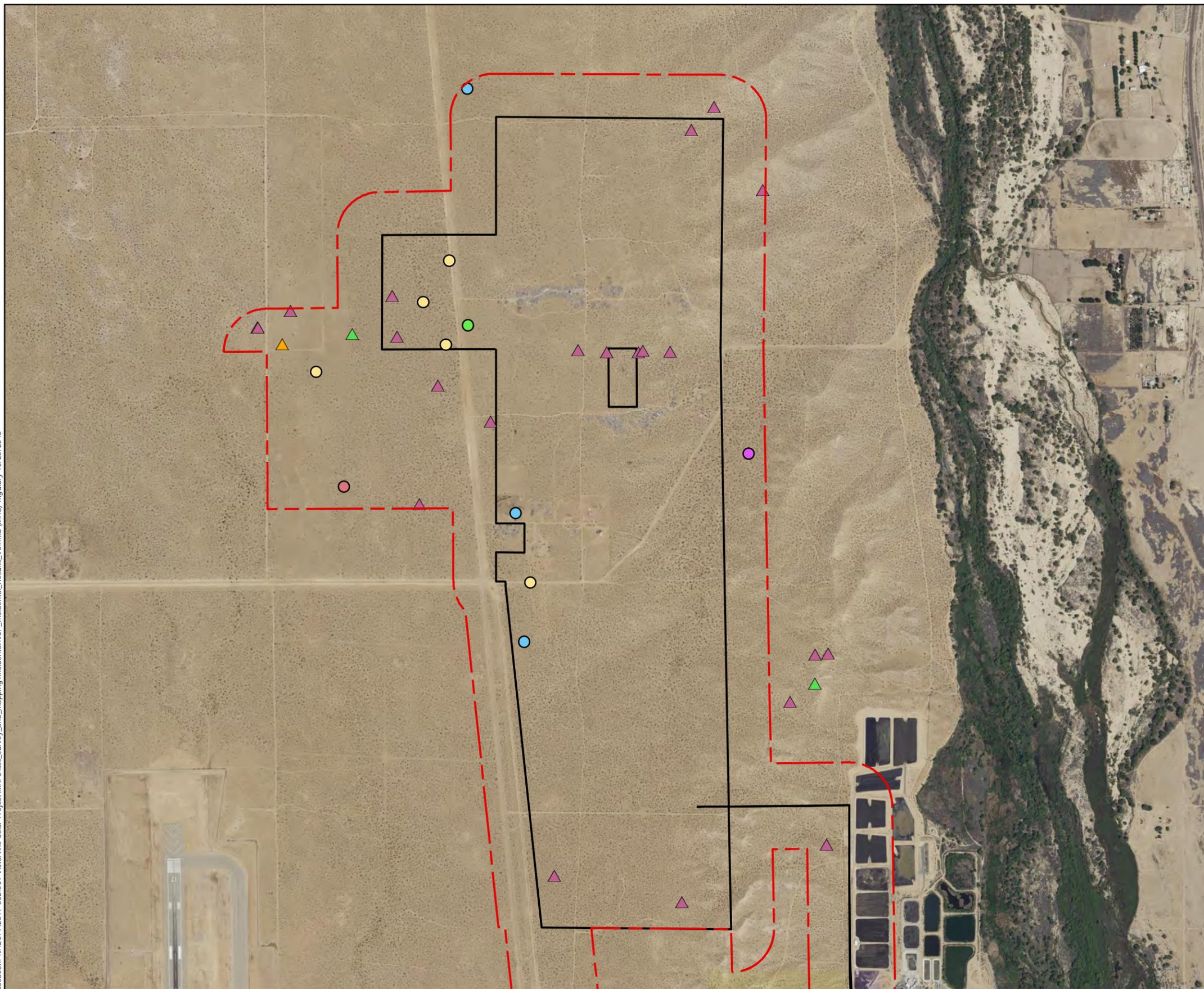


Figure 19. Incidental Sensitive Biological Resources Sheet 1

Map Features

- Survey Area (500')
- Project Boundary

Incidental Results

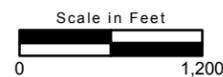
Birds

- Cactus Wren - Nest (Active)
- Common Raven - Nest (Active)
- Loggerhead Shrike - Observation
- Swainson's Hawk - Observation
- Yellow-headed Blackbird - Observation

Desert Kit Fox

- Known Den (Occupied)
- Known Den
- Potential Den

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Location: N:\2017\2017-062\001_Victorville_Solar_Project\MAPS\ss_survey_and_mapping\Incidental\NISP_Incidental_Results_V3.mxd (MAG) mguidry 10/25/2018

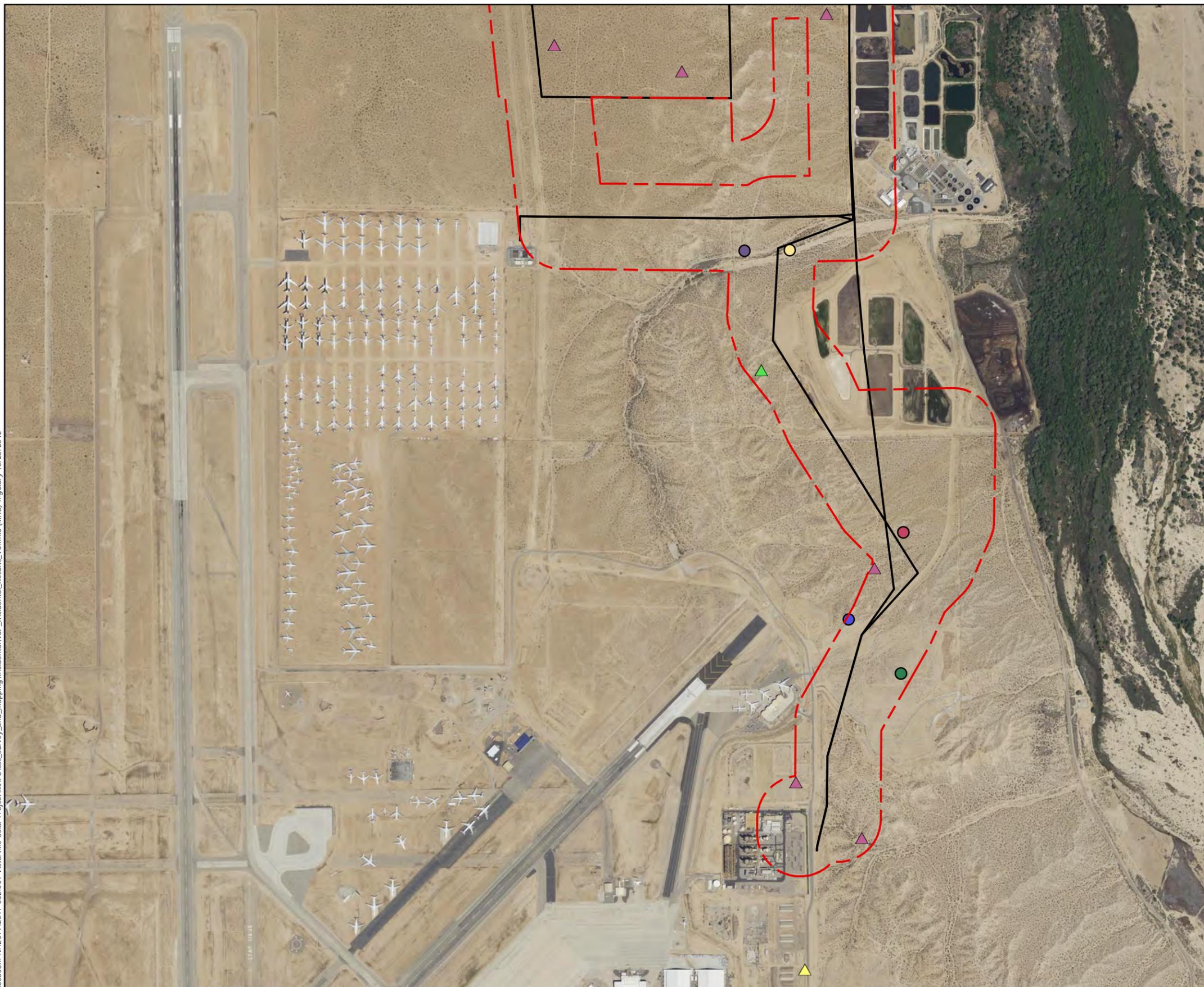


Figure 19. Incidental Sensitive Biological Resources Sheet 2

Map Features

- Survey Area (500')
- Project Boundary

Incidental Results

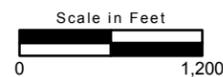
Birds

- Black-throated Sparrow - Nest (Active)
- Lark Sparrow - Nest (Active)
- Loggerhead Shrike - Observation
- Mourning Dove - Nest (Active)
- Peregrine Falcon - Observation

Desert Kit Fox

- Natal Den
- Known Den
- Potential Den

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



4.5.2 Nesting Birds

In addition to incidental special-status bird species, eight locations with active nesting birds were incidentally recorded within the project boundaries during the focused and protocol surveys. All the species of nesting birds observed are protected by the MBTA, though no special-status nesting birds were recorded. Species of these active nests include black-throated sparrow, cactus wren, common raven, and lark sparrow (*Chondestes grammacus*). Information and locations pertaining to all recorded nesting birds can be found in Figure 19 and Appendix H.

4.5.3 Special-Status Mammals

Though not listed pursuant to CESA, the desert kit fox is a fur-bearing mammal that is protected under Title 14, Subdivision 2, "Game, Furbearers, Nongame, and Depredators," Chapter 5, Section 460 of the California Code of Regulations (CCR). Therefore, CDFW does not have a mechanism for take of the species by development projects. The California Fish and Game Code (Section 4000 et seq.) defines certain species, including the fisher, marten, river otter, desert kit fox, and red fox, as "fur-bearing mammals" and further describes the conditions under which fur-bearing mammals may be trapped or hunted. The desert kit fox is not tracked in the CNDDDB database, and no records of this species were revealed in the literature review. However, suitable habitat for this species was present throughout the project and desert kit fox burrows with sign (e.g., scat, tracks) present were documented within the project boundaries during surveys.

Desert kit fox presence was recorded in 30 locations comprising 65 burrows/dens total during the focused surveys conducted for the project (Table 12). Multiple den/burrow entrances were documented at several locations. Of the 65 burrows identified, 20 known, unoccupied dens were located within the Solar Field Area. These dens were of suitable size and shape, had evidence of previous desert kit fox use (e.g., pieces of scat, tracks, fresh urine), but a desert kit fox was not observed using the den at the time it was recorded. One natal den, five known dens that were occupied by desert kit fox at the time of observation, 34 known and unoccupied dens, and 5 potential dens (of suitable size and shape but no desert kit fox sign present) were documented outside of the project boundaries.

During a burrowing owl survey conducted in June 2017, a family of five desert kit fox pups was incidentally observed in a culvert pipe approximately 1,070 feet south of the southern terminus of the project boundaries and west of Perimeter Road (Figure 20). The culvert pipe, which was likely being used as a natal den, was located within a fenced private property immediately south of the High Desert Power Project and Substation, and therefore, the desert kit fox pups were observed from a distance using binoculars. No adult desert kit fox was observed near the culvert at the time of the survey; however, it is presumed that at least one adult was associated with the pups and natal den. During special-status plant surveys in May 2018, two desert kit fox individuals were observed at a known den complex beneath an old concrete foundation in the northwest corner of the Special-Status Plant Survey Area, outside of the project boundary. A single desert kit fox was also observed at this complex during the final burrowing owl survey in late June 2018. Information pertaining to all desert kit fox findings can be found in Appendix I.

Desert Kit Fox Feature	Location				Total #
	Within Solar Field Area	Within Preferred Gen-Tie Alignment	Within Alternative Gen-Tie Alignment	Outside Project Boundaries	
Natal Den	0	0	0	1 (one location)	1
Known Den (Occupied)	0	0	0	5 (one location)	5
Known Den (Unoccupied)	20 (10 locations)	0	0	34 (15 locations)	54
Potential Den	0	0	0	5 (3 locations)	5
Total	20	0	0	45	65



Figure 21. Five desert kit fox pups utilizing a culvert pipe as a natal den within fenced private property 1,070 feet south of the southern terminus of the project boundaries.

5.0 DISCUSSION

5.1 Biological Reconnaissance Survey

Most of the area within the project boundaries was characterized as Mojave creosote bush scrub, with a few areas containing desert saltbush scrub, Mojave desert wash scrub, disturbed land, and urban/developed land. None of these vegetation communities or land cover types are considered sensitive; however, Mojave creosote bush scrub is considered suitable habitat for special-status plants and

wildlife. A total of 10 special-status plant species and six special-status wildlife species were found to have potential to occur in the project boundaries based on the presence of suitable habitat and documented observations found during the literature review.

Potential nesting habitat for migratory birds was present within the project boundaries and in the vicinity. Raptors typically breed between February and August, while non-raptor birds generally nest between March and August. Native, non-game avian species are protected under the federal Migratory Bird Treaty Act (USFWS 1918) and California Fish and Game Code.

The area within the project boundaries provides wildlife movement opportunities since it is open and unimpeded land. However, it would not be considered a wildlife movement corridor that would require preservation to allow wildlife to move between important natural habitat areas due to the lack of conserved natural lands in the vicinity and the amount of open, undeveloped land surrounding the project boundaries.

5.2 Mohave Ground Squirrel Habitat Assessment

A Mohave ground squirrel habitat assessment was conducted concurrently with the biological reconnaissance surveys in 2017 and 2018. Aside from the dirt roads and disturbed/developed areas, the project boundaries provide suitable habitat for Mohave ground squirrel; the vegetation, soils, and topography are all appropriate to support the species. A total of 612.80 acres of suitable habitat was mapped within the survey area. Two plant species closely associated with Mohave ground squirrel, spiny hopsage and winter fat, were identified within the project boundaries. Mohave ground squirrel were neither aurally detected nor visually observed during any of the Mohave ground squirrel habitat assessments conducted in March 2017, April 2018, and October 2018. The March 2017 and April 2018 habitat assessments were conducted during the Mohave ground squirrel active period, but the October 2018 habitat assessment was conducted when the animal was already underground for the fall and winter months and the animal would not have been detectable at that time.

The historic and recent records of Mohave ground squirrel occurring within five miles of the project boundaries indicate that the Mohave ground squirrel has historically occupied the area and may still be present in the areas within and around the project boundaries. Project-related impacts to Mohave ground squirrel and its habitat would need to be covered under a Section 2081 Incidental Take Permit from CDFW and acquisition of mitigation lands would need to be acquired to offset impacts related to habitat loss.

5.3 Focused and Protocol Surveys

5.3.1 Special-Status Plants

Special-Status Plant Focused Surveys

Two specimens of a special-status plant species, Coves' cassia, was observed during the focused special-status plant surveys. Coves' cassia is not protected under FESA or CESA, but it is considered rare by CNPS (a CRPR 2B.2 species). The specimens were identified near a hydroseeded slope, likely associated with the nearby landfill, which is located upslope and southwest of the Coves' cassia specimens. This hydroseeded slope has connectivity (i.e., surface topography could convey runoff) with the graded slope and the dirt

road harboring the Coves' cassia specimens (Figure 21). Detailed research of Coves' cassia found that erosion control companies often incorporate it into their hydroseed mix and transportation departments often use it as a roadside wildflower species in other states. In addition, the Coves' cassia that was found in the project boundaries was growing at a higher elevation range and over 85 miles outside of its known occurrence range. The occurrence of Coves' cassia in the project boundaries is most likely due to the presence of seed in or on equipment that was used for hydroseeding work in neighboring states. Mitigation for the specimens is not recommended, as it is likely that this occurrence is a result of accidental transfer from landscaping equipment and not a natural occurrence.



Figure 22. Graded slope harboring Coves' cassia.

Special-Status Plant Habitat Assessment: 49-Acre Project Addition

The Special-Status Plant Habitat Assessment Area, like the surrounding areas, contains Mojave creosote bush scrub. This plant community has the potential to harbor special-status plant species that may have been dormant or non-existent during the Special-Status Plant Habitat Assessment. It is recommended that focused special-status plant surveys occur during target plant species blooming periods to verify if special-status plants occur within the Special-Status Plant Habitat Assessment Area.

Cactus and Joshua Tree Inventory

Plant species regulated by state laws and local jurisdictions that were observed within the Special-Status Plant Survey Area included beavertail cactus, Joshua tree, silver cholla, and branched pencil cholla. These

species are not federally or state-listed as endangered or threatened, or ranked by CNPS, but are regulated by the Native Plant Protection Act (cactus species) and the City of Victorville (Joshua tree). Based on the 2017 desktop and 2018 GPS inventories, it is estimated that 352 Joshua trees and 865 cactus species occur within the project boundaries. The purpose of the Joshua tree and cactus inventory was to provide the project proponent with information relating to these species in order to aid in future project planning efforts.

Removal of cactus species typically require a harvesting permit from the Commissioner or the Sheriff of the county in which the native plants are growing under the Food and Agricultural Code Division 23: California Desert Native Plants Act. However, the California Desert Native Plants Act (Act) provides a specific exemption for utilities carrying out a public service. The Act does not apply to a public agency or to a publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public (Food and Agricultural Code Division 23: California Desert Native Plants Act. Section 80117). The project proponent is a privately-owned utility with a Power Purchase Agreement (PPA) with Southern California Edison and is excluded from provisions under the Act. Therefore, no further survey efforts or mitigation will be required for impacts to cactus species within the project boundaries.

In order for the project to be in compliance with the City of Victorville's Joshua tree ordinance (Ordinance Number 1224; Municipal Code Chapter 13.33), a focused survey and detailed report identifying the exact location, health, and other data of each Joshua tree within the project boundaries will need to be performed prior to ground-breaking activities. Trees healthy enough for relocation and/or adoption efforts will need to be identified and, prior to ground-breaking activities, the Joshua trees healthy enough

Potential Limitations to Survey Results

Based on the average rainfall totals in the Victorville region, the 2016-2017 rainfall season recorded the only above-average rainfall measurement to occur within the past four years. All other years, including 2018, 2015, and 2014, recorded below average rainfall measurements. Annual germination and survival of special-status target species (if present) could have been affected by the below-average rainfall during the 2017-2018 season and during the drought conditions of previous years. Special-status target species may need continuous average rainfall years to reach their average population size and number.

Although the focused special-status plant surveys were conducted during the appropriate blooming periods for the target special-status plant species, the special-status plant habitat assessment was not conducted within the appropriate blooming periods. However, the vegetation community within the Special-Status Plant Habitat Assessment Area is similar to the vegetation communities within the project boundaries, where no special-status plants have been observed, and the presence of special-status plant species within the Habitat Assessment Area is expected to be the same as that of the project boundaries.

5.3.2 Desert Tortoise

The majority of the area within the project boundaries consisted of low quality yet suitable habitat for desert tortoise. A total of five live desert tortoise observations were documented during protocol surveys: two within the Solar Field Area (Live Tortoises 8 and 9) and three outside the project boundaries (Live Tortoises 1, 2, and 3). A total of 26 burrows were observed during the protocol desert tortoise survey, of

which, five were located within the Solar Field Area and 21 were located outside of the project boundaries. There were no burrows identified within the Preferred or Alternative Gen-Tie Lines. Nineteen pieces of scat were documented during the protocol desert tortoise survey, of which, 11 were within the Solar Field Area and eight were outside of the project boundaries. There were no pieces of scat documented within the Preferred or Alternative Gen-Tie Lines. One old and disarticulated carcass was observed within the Solar Field Area during the protocol desert tortoise survey.

Due to the proximity of the locations where Live Tortoises 8 and 9 were observed (within 125 feet of one another), the fact that the two tortoises appeared to be the same approximate size, and because these observations were made during protocol surveys conducted on different dates (May 16, 2018, and October 9, 2018, respectively), it is possible that this was simply two observations of the same individual.

Four live desert tortoises were incidentally observed during other focused surveys: one within the Solar Field Area (Live Tortoise 7) and three outside the project boundaries (Live Tortoises 4, 5, and 6). There were no live desert tortoise observations within the Preferred or Alternative Gen-Tie Alignments. A total of five burrows were incidentally observed during other surveys, one of which was located within the Preferred Gen-Tie Alignment and the remaining were located outside of the project boundaries. The one burrow located within the Preferred Gen-Tie Alignment was a Class 2 burrow. Three pieces of scat were incidentally observed, all of which were fresh or recently deposited. One piece of scat was found within the Solar Field Area and the rest were documented outside the project boundaries. One old and disarticulated carcass was incidentally observed outside the project boundaries.

Live Tortoises 2, 3, 4, and 6 were identified in proximity to one another. Live Tortoises 2 and 3 were male and female, Live Tortoise 4 was a male, and the sex of Live Tortoise 6 was unknown because the individual was observed inside of a burrow. It is possible that these four observations are of the same two individuals that were observed mating on May 2, 2017, or that the four observations are of three individual desert tortoises. It is unlikely that these four observations are of four unique individuals; however, the only way to confirm this would be to conduct another protocol survey of the area during the same survey season to identify individuals in this area.

Results of the CNDDDB search documented several desert tortoise occurrences in the vicinity of the project boundaries and previous surveys conducted for the VV2 Project in 2006 identified six live desert tortoises and desert tortoise sign (Appendix A).

Desert tortoise and its habitat is present within the project boundaries; therefore, project-related impacts to this species will need to be addressed in a Section 7 Biological Opinion and/or a Section 10 Habitat Conservation Plan submitted to USFWS. After consultation with USFWS, an Incidental Take Permit will be issued to the project that will allow take of the species and its habitat. Furthermore, acquisition of mitigation lands would need to be acquired to offset impacts related to habitat loss.

Potential Limitations to Survey Results

Due to changes and additions to the project design between 2017 and 2018, there were areas within the Desert Tortoise Survey Area that were inadvertently re-surveyed in an effort to ensure 100 percent survey coverage of the Desert Tortoise Survey Area was achieved. This and the mobile nature of desert tortoises traveling throughout the area may have resulted in duplicate observations of individual live desert

tortoises during the surveys. Attempts were made to offset this survey limitation by mapping live desert tortoise locations and comparing locations and notes on size, sex, and health of the individuals to determine which observations may have been duplicate. However, without actually handling and individually marking the live desert tortoises encountered during the surveys (which is not an authorized activity during protocol surveys), it is difficult to ascertain duplicate observations with 100 percent confidence.

The protocol desert tortoise surveys were conducted concurrently with focused burrowing owl surveys where appropriate and was carried out according to the 2010 USFWS protocol during the appropriate time of year (April and May) and within appropriate weather conditions (Appendix F and G). Small portions of the Desert Tortoise Survey Area were not surveyed due to private property access issues, but biologists were able to scan these areas with binoculars where possible. Combining the desert tortoise survey with the burrowing owl survey effort did not present any survey limitations, nor would it have affected the detection of desert tortoises or their sign within the Desert Tortoise Survey Area.

The below-average rainfall experienced during the 2017-2018 rainfall season may have affected the activity level of live tortoises in the Desert Tortoise Survey Area in 2018 due to the reduced availability of vegetation for forage. As such, additional unidentified live tortoises may be present but were not visible in burrows in the portions of the Desert Tortoise Survey Area that were surveyed in 2018.

5.3.3 Burrowing Owl

Focused Breeding Season Surveys / Burrowing Owl Habitat Assessment and Burrow Survey

Suitable habitat for burrowing owl was identified throughout the majority of the area within the project boundaries. No burrowing owl individuals were observed during the focused surveys conducted in 2017 or 2018 during the breeding season. A total of 60 occupied burrows (exhibiting sign of burrowing owl use) were documented; of which, 27 were within the Solar Field Area and 33 were outside the project boundaries. Of the 50 potential burrows identified (burrows with no sign of burrowing owl use), 14 were within the Solar Field Area, one was within the Alternative Gen-Tie Alignment, and 35 were outside the project boundaries.

A single adult burrowing owl individual was observed during the burrowing owl habitat assessment and burrow survey conducted in the 49-acre project addition in October 2018. Also during the habitat assessment and burrow survey of the 49-acre project addition, 11 occupied burrows were identified outside the project boundaries. Eleven potential burrows were identified during the burrowing owl habitat assessment and burrow survey; of which, three were located within the Solar Field Area and eight were outside the project boundaries.

Burrowing owls were not documented using the areas within the project boundaries for breeding purposes in 2017 or 2018. The individual burrowing owl that was observed during the habitat assessment and burrow survey in October 2018 did not appear to be associated with a burrow location. Due to the timing of this observation, it is likely that this owl was migrating through the area and not a resident or breeding individual.

Burrowing owl observations have been documented in the vicinity of the project boundaries and previous surveys conducted in 2006 for the VV2 Project documented four live burrowing owls (Appendix A). Based on the 2017-2018 focused survey results and the results of the literature review, burrowing owl is

assumed to be present within the project boundaries. If project-related impacts to burrowing owl and their burrows will occur, then avoidance and minimization measures will need to be implemented and coordination with CDFW regarding the potential impacts will need to occur. Avoidance and minimization measures may include, but are not limited to, scheduling ground-disturbing activities outside of the burrowing owl breeding season, pre-construction surveys, establishing disturbance limit buffers around burrows, and/or excavation and collapse of burrows.

Potential Limitations to Survey Results

During two of the eight total focused surveys conducted for burrowing owl, the survey methodology deviated somewhat from the CDFW protocol. This was to accommodate a protocol desert tortoise survey being conducted concurrently with a focused burrowing owl survey. During one survey in 2017 and one survey in 2018 where biologists surveyed for desert tortoise and burrowing owl concurrently, the transect width walked during the surveys was reduced from 60 feet to 30 feet to accommodate the more stringent desert tortoise survey protocol. Also, on these two occasions, surveys were conducted past the recommended burrowing owl survey timeframe of 10:00 a.m.; however, surveys for the two species were never conducted past 2:00 p.m. Aside from these deviations, all other aspects of the burrowing owl survey protocol were adhered to during the two combination desert tortoise and burrowing owl surveys. Reducing the transect spacing during these combined surveys does not present a survey limitation because it would not have impeded the detection of burrowing owl. Rather, smaller transect spacing increased the accuracy of the surveys by allowing biologists to survey more area than was necessary according to the guidelines in the survey protocol. There would have been fewer chances for biologists to miss a live burrowing owl or burrow during these surveys. The only limitation associated with the deviation from the standard burrowing owl survey methodology was that surveys extended beyond the burrowing owl activity period of 10:00 a.m. that is described in the survey protocol document (CDFW 2012). Consequently, if live burrowing owls were present on site then detection of live individuals between the hours of 10:01 a.m. and the survey end time of 2:00 p.m. would have been reduced because live burrowing owl individuals could have been inside their burrows and undetectable at the time the biologists walked through that particular area. However, this deviation would not have affected the biologists' ability to detect burrowing owl presence within or adjacent to the project boundaries through sign (e.g., whitewash, pellets, feathers, carcasses) at actively used burrows. If live burrowing owls were, in fact, present within the project boundaries during the focused breeding season surveys, then they would have been detectable during the remaining six burrowing owl surveys that were conducted in accordance with the survey protocol during the breeding season.

Additional potential limitations to the results of the focused burrowing owl surveys included private property access restrictions during the 2017 and 2018 focused surveys. Where access was restricted, biologists scanned the areas with binoculars where possible

Overall, conducting four surveys for burrowing owl within the Burrowing Owl Survey Area helped to compensate for any potential survey limitations because the repeated surveys increased the chances of surveyors identifying live individuals and active burrows (with sign and/or burrowing owls present) over time. It also important to note that active burrows with burrowing owl sign are detectable regardless of time of day or year and most weather conditions (except after heavy rains).

The Burrowing Owl Habitat Assessment Area was surveyed on a single day outside of the breeding season in October 2018 and this portion of the project was not covered during the focused breeding season

survey effort because it was added to the project after the burrowing owl breeding season had ended. Breeding activities for burrowing owls is unknown in this area; however, due to its contiguous nature with adjacent areas where focused surveys were conducted, it is likely that burrowing owl activity within the 49-acre project addition is the same as the conditions documented in the Burrowing Owl Survey Area.

5.3.4 Other Special-Status Species

Six special-status wildlife species were detected within and adjacent to the project boundaries during survey efforts in 2017 and 2018: desert kit fox, Swainson's hawk, northern harrier, peregrine falcon, loggerhead shrike, and yellow-headed blackbird. The desert kit fox is a fur-bearing mammal protected under Title 14, Chapter 5, Section 460 of the California Code of Regulations (CCR); the Swainson's hawk is a state-listed Threatened species, the peregrine falcon is a CDFW Fully Protected species; and northern harrier, loggerhead shrike, and yellow-headed blackbird are classified as CDFW SSC. Several other special-status species that were not observed during surveys in 2017 and 2018 have potential to occur within or adjacent to the project boundaries (see Tables 2 and 3, above).

The five sensitive bird species that were observed during surveys are also protected under the MBTA. Most native bird species in California, both migrant and resident species, are protected under the MBTA. The MBTA (16 USC sections 703-712) is a federal law that implements international treaties and conventions held to protect migratory birds (USFWS 1918). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10. In addition to the MBTA, CDFW also enforces the protection of non-game native birds. California Fish and Game Code Sections 3503, and 3503.5 mandate the protection of non-game native birds' nests, and Fish and Game Code Section 3800 makes it unlawful to take California-native non-game birds. Active nests of birds protected by the MBTA were also observed. Shrubs, Joshua trees, and structures throughout the project boundaries provide habitat for nesting birds. Avoidance and minimization measures will need to be implemented during ground-disturbing and other project activities to avoid or minimize impacts to nesting birds and the special-status bird species observed within or adjacent to the project boundaries. Coordination with the appropriate regulatory agencies on appropriate avoidance and minimization measures may also be necessary. Measures may include, but are not limited to, scheduling of ground-disturbing activities outside of the nesting season, pre-construction surveys, and/or nest monitoring.

Desert Kit Fox

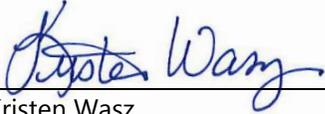
Desert kit fox presence was recorded in 30 locations comprising 65 burrows/dens total during the focused surveys conducted for the project. Of the 65 burrows identified, 20 known, unoccupied dens were located within the Solar Field Area. One natal den with five pups present, five known dens that were occupied by desert kit fox at the time of observation, 34 known and unoccupied dens, and 5 potential dens were documented outside of the project boundaries.

Most desert kit fox burrows can be, and often are, used by burrowing owls and occasionally by desert tortoises. While no burrowing owls were observed at any identified desert kit fox burrow locations, several desert kit fox burrows also contained burrowing owl sign, and there is the potential for burrowing owls to use the desert kit fox burrows in the future. Furthermore, some desert kit fox burrows identified during the surveys may also be suitable for and used by desert tortoise.

Desert kit foxes have been documented within and adjacent to the project boundaries. In order to avoid or minimize impacts to desert kit fox, coordination with CDFW and implementation of avoidance and minimization measures will likely to occur before and during project activities. These measures may include, but are not limited to, pre-construction surveys, den excavation and collapse, and/or establishing disturbance limit buffers around dens.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

Signed:  Date: December 7, 2018
Kristen Wasz
Senior Biologist

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Appendix E – Focused Special-Status Plant Survey Data Sheets and Weather Conditions

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Appendix H – Incidental Special-Status Species and Nesting Bird Observations

Appendix I – Incidental Desert Kit Fox Observations

Draft Victorville 2 Hybrid Power Project Biological Resources Technical Report



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Victorville 2 Hybrid Power Project
Biological Resources Technical Report

City of Victorville
San Bernardino County, California
Township 6 North, Range 5 West, Sections 2, 11
USGS 7.5' Helendale and Victorville Northwest Quadrangles

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Report Date: 23 February 2007

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Victorville 2 Hybrid Power Project

Biological Resources Technical Report

EXECUTIVE SUMMARY

An assessment of the biological resources with the potential to occur on, and in the vicinity of the proposed Victorville 2 Hybrid Power Project (VV2 or Project) was conducted by AMEC Earth & Environmental, Inc. (AMEC) to identify onsite and nearby vegetation communities as well as special status flora and fauna that may be impacted by the implementation of this Project. This study included: 1) a general biological resources assessment, 2) a focused survey for desert tortoise (*Gopherus agassizii*), 3) a habitat assessment and focused trapping survey for Mohave ground squirrel (*Spermophilus mohavensis*), 4) a habitat assessment and focused survey for burrowing owl (*Athene cunicularia*), 5) a focused survey for potentially occurring rare plant species, and 6) and a delineation of federal "Waters of the United States" and "State Waters".

The VV2 Project site is primarily located within the City of Victorville, San Bernardino County, California with a portion of the proposed electrical transmission line located within the City of Hesperia. The Project consists of a proposed 275-acre power plant, two adjacent construction staging areas totaling a combined 50 acres, and approximately 21 miles of electrical transmission line including the construction of 275 new transmission line towers. Although the power plant site itself is 275 acres, the disturbance footprint for the site (which includes fill slopes and access) is 338 acres. For this reason, the 338-acre figure is used throughout the remainder of this document to refer to the power plant disturbance footprint. The electrical transmission line is divided into three segments numbered sequentially from north to south. Segment 1 would contain: (1) 4.3 miles of new electrical transmission lines placed on 31 new 230kV single tubular pole towers connecting the power plant to an existing electrical transmission path to the south that serves the existing High Desert Power Project (HDPP), (2) a new underground approximately 1.5-mile reclaimed water pipeline connecting the power plant to the Victor Valley Wastewater Reclamation Authority (VWRA) facility, and (3) a new approximately 1.25 mile underground wastewater pipeline connecting the power plant to an existing sewer main. Segment 2 is approximately 5.7 miles in length and is located within an existing electrical transmission line corridor and connects Segment 1 to the existing Victor Substation to the south. A total of six new electrical transmission line towers and 300 feet of new access roads would be constructed within Segment 2. Segment 3 also is within existing transmission Right of Way (ROW) and requires the construction of a total of 238 new transmission line towers connecting the Victor Substation to the Lugo Substation approximately 11 miles further south. The total disturbance footprint for the linear features totals approximately 77 acres.

The proposed Project site is primarily located in natural, undisturbed open space largely vegetated with Mojave creosote bush scrub with disturbed/developed areas also present. Other vegetation communities present within portions of the site include Mojavean juniper woodland

and scrub, desert saltbush scrub, non-native grassland, and rabbitbrush scrub. Joshua trees and three species of native cacti are also present throughout the various areas of the site. The most prominent geologic feature near the site is the Mojave River, located approximately 0.5 mile east of the power plant site and approximately 50 feet from portions of Segment 1 (i.e., reclaimed water line and transmission line).

A literature review of pertinent biological data bases, documents, and biologists with local expertise reported occurrences of 49 special status biological resources in the vicinity of the Project site. No designated critical habitat for any species is located within the proposed disturbance footprint of the power plant. Designated critical habitat for the southwestern willow flycatcher, however, is located immediately adjacent (within approximately 150 feet) to portions of the Segment 1 transmission line alignment. Designated critical habitat for the Desert Tortoise is located approximately three miles north of the power plant site.

Several special status species were observed during the general and focused biological field surveys. These included six live desert tortoises, two onsite and four within the Zone of Influence (ZOI) of the site; three live burrowing owls within the Project site 500-foot buffer zone; Le Conte's thrasher (Segment 1); and a variety of other resident and migratory bird species on the Project site. Additionally, the Project proponent (the City of Victorville) has assumed the presence of Mohave ground squirrel (MGS) throughout the Project site, despite trapping surveys conducted in various areas of the site that did not result in the trapping or observation of any Mohave ground squirrels. A variety of special status plant and wildlife species also have the potential to occur within limited areas of the site. Impacts (if any) to these potentially-occurring special status plant and wildlife species are not expected due to the very limited and marginal quality of habitat present within the Project footprint. A total of 55 federal and state jurisdictional waters were also identified along the Project water pipeline and transmission line routes.

Implementation of the proposed VV2 Project would result in the permanent loss of approximately 342 acres and temporary loss of approximately 66 acres of occupied or otherwise suitable desert tortoise habitat and potentially suitable Mojave ground squirrel habitat. Additionally, a subset of this affected acreage is used periodically by at least three burrowing owls, an unknown number of Le Conte's thrasher and loggerhead shrike, and a few other migratory bird species. A permanent loss of this upland avian habitat would be expected as a result of implementation of the proposed Project. Appropriate mitigation measures and habitat loss replacement (compensation) programs for impacts resulting from the proposed VV2 Project have been developed and will be implemented as part of the Project.

The southwestern pond turtle has been reported to occur within the VVWRA treatment ponds located immediately adjacent to a small portion of Segment 1 (i.e., reclaimed water pipeline). Project implementation would avoid potential impacts to any natural areas, habitat or individuals of this species, as the reclaimed water pipeline and associated disturbances would be entirely confined within the existing compacted VVWRA sewer pond perimeter roads. Additionally, onsite daily biological monitoring and clearance surveys would be conducted in this area to further ensure that potential impacts are avoided.

Additionally, there is a potential for several special-status bird species to occur within the Project area within riparian habitat located in the Mojave River adjacent to portions of Segment 1. These birds include nesting riparian-bird species, the state and federally listed- endangered southwestern willow flycatcher and least Bell's vireo and the state listed-threatened western yellow-billed cuckoo. Indirect impacts to nesting individuals of these species could result from noise associated with Project-related construction activities if these activities occur during the nesting season. For this reason, construction activities in the areas adjacent to riparian habitats would occur outside the nesting seasons for these species (Feb. 15 – Aug. 31).

An Endangered Species Act (ESA) Section 7 consultation between the U.S. Environmental Protection Agency (EPA), the expected Federal lead agency for the Project, and the U.S. Fish and Wildlife Service (USFWS) will be required for the VV2 Project regarding anticipated impacts to the federally-listed desert tortoise. A formal biological assessment (BA) will be prepared to facilitate the ESA Section 7 consultation process. The resulting biological opinion (BO) is anticipated to be adopted by California Department of Fish and Game (CDFG) pursuant to California Endangered Species Act (CESA) permitting requirements for the desert tortoise, which is also a California state-listed species. The BA also would be used to facilitate CESA Section 2081 incidental "take" permitting by the CDFG for the state-listed Mohave ground squirrel. Mitigation measures and/or conservation recommendations, in addition to those proposed in the BA, may be identified by EPA, USFWS and/or CDFG.

USFWS will issue an ESA Section 7 BO to the EPA and CDFG will issue a CESA Section 2081 incidental "take" permit to the Project proponent to comply with ESA and CESA requirements for the proposed Project. Terms and conditions outlined in the ESA Section 7 BO, along with measures specified in the "Mitigation and Monitoring Program" (MMRP) associated with the CESA Section 2081 incidental "take" permit, as well as any specific conditions of approval identified by the EPA and CEC, would be binding on the VV2 Project.

Adherence to mandatory terms and conditions included in the ESA Section 7 BO and CESA Section 2081 incidental "take" permit and measures proposed for the VV2 Project would mitigate anticipated biological resource impacts to a less than significant level.

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Victorville 2 Hybrid Power Project
Biological Resources Technical Report

1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) was contracted by ENSR to prepare a biological resource assessment and technical report for the development of the proposed Victorville 2 Hybrid Power Project (VV2 or Project) located in the City of Victorville, San Bernardino County, California (see Appendix 1, Map 1). This study included: 1) a general biological assessment/biological resource assessment; 2) a focused survey for desert tortoise (*Gopherus agassizii*); 3) a habitat assessment and focused survey for Mohave ground squirrel (*Spermophilus mohavensis*); 4) a habitat assessment and focused survey for burrowing owl (*Athene cunicularia*); 5) a focused survey for rare plant species known to occur in the Project vicinity; and 6) a delineation of "Waters of the United States" and "State Waters".

The objectives of this study are to: 1) review and assess the biological resources in the vicinity of the Project site with particular attention to "sensitive biological resources" as defined by the California Energy Commission's (CEC) power plant siting regulations; 2) address the potential effects to sensitive biological resources resulting from implementation of the proposed Project; and 3) comply with the requirements of California and federal ESAs and CEC power plant siting regulations for biological resources.

To this end, a literature review and general survey was conducted to determine the biological resources with the potential to occur in the vicinity of the Project site. The conservation status and suitable habitat of pertinent sensitive species and the potential for each to occur on or near the site were included in this review. Potential direct, indirect and cumulative Project impacts to these sensitive biological resources were evaluated and are discussed in the context of their "significance" under CEC regulations, federal and state ESAs and local jurisdictional policies (i.e., County of San Bernardino, City of Victorville Joshua Tree Ordinance, and Native Desert Plant Protection Act). Information provided in this technical report is intended to assist all involved regulatory agencies in subsequent reviews of the proposed Project. The involved regulatory agencies include the CEC, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), U.S. Army Corps of Engineers (USACE), the City of Victorville (City), the Project Proponent, and the U.S. Environmental Protection Agency (EPA) which is expected to serve as the federal "lead agency" for this Project.

2.0 REGULATORY FRAMEWORK

The following narrative describes biological resource regulatory parameters promulgated at the federal, state and regional levels relative to the VV2 Project.

2.1 Federal

Endangered Species Act (ESA): 16 USC §§1531-1544 (1973, as amended) – Section 9 of the ESA specifically prohibits the “take” of listed animal species. “Take” is defined therein as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” relative to listed animals. The ESA also makes it illegal for any person to remove and reduce to possession” or “maliciously damage and destroy” any endangered plant species. Recognizing that “take” cannot always be avoided, Section 10 of the ESA includes provisions for “take” that are incidental to, but not the purpose of, otherwise lawful activities occurring on state or private lands. Section 7 of the Act provides a similar function for incidental take considerations associated with federal agencies that undertake, fund or authorize actions potentially affecting listed species.

Section 7 of the Act also directs the USFWS issuance of “biological opinions” (BO) to requesting federal agencies in consideration of actions which may affect listed species. These binding regulatory documents identify probable impacts to listed species and/or designated critical habitat, and offer an expert opinion as to whether a proposed action would constitute jeopardy to the continued existence of listed species or result in “adverse modification” of critical habitat. This process is initiated with the submission of a “biological assessment” (BA) by the requesting federal agency, which ascertains that a “may-affect” situation exists with regard to the considered action. Terms and conditions designed to minimize anticipated impacts are generally specified in the resulting BO issued by the USFWS, as is a specific level of “incidental take.”

The USFWS Ventura Field Office administers ESA consultation and permitting actions for the Victorville, California region. The U.S. Bureau of Land Management recently also released the West Mojave Plan Amendment to the California Desert Conservation Plan (BLM 2006), which addresses listed species recovery needs locally. A separate Habitat Management Plan which addresses future ESA Section 10 incidental take permitting on state and /private lands is also being prepared by San Bernardino County.

As VV2 Project implementation would result in the incidental take of the state/federally listed-threatened Desert tortoise and the EPA regulatory nexus has been identified; ESA Section 7 consultation between this agency and the USFWS would be necessary to authorize this action. A BA will be prepared for EPA use in Section 7 consultation with the USFWS. The resulting BO issued by USFWS is anticipated to include terms and conditions similar to mitigation measures proposed herein to minimize desert tortoise impact and habitat loss, as well as a specific incidental take allowance.

Federal Clean Air Act (CAA): 42 USC Chapter 85 (1970, as amended) – The primary objective of the CAA is to establish federal standards for air pollutants from stationary and mobile sources and to work with states to regulate polluting emissions. The Project would occur within the Mojave Desert Air Basin (MDAB) in California, which is regulated by the Mojave Desert Air Quality Management District (MDAQMD). The MDAB does not currently meet federal air pollution standards for some criteria pollutants established by the federal EPA, such as ozone and PM-10 (particulate matter under 10 microns in size).

The primary source of ozone for this region is rapid urbanization within the MDAB and the South Coast Air Basin. Primary sources of PM-10 are naturally occurring dust picked up by wind, fugitive dust sources associated with construction, off-highway vehicle travel, unpaved road/parking lot use, industrial activities and military maneuvers. This identified non-attainment with established emission standards warrants special considerations and controls for all project proposals which would further affect air quality of the MDAB.

Fugitive dust emissions are expected to occur as a result of VV2 Project implementation. As such, a specific Fugitive Dust/Pm-10 Control Management Strategy in cooperation with the MDAQMD would be developed for the VV2 Project.

Federal Water Pollution Control Act or “Clean Water Act” (CWA): 33 USC §§1251 - 1376 (1972, as amended) – A comprehensive statute aimed at restoring and maintaining the chemical, physical and biological integrity of the nation’s waters. Per this Act, due regard is to be given improvements found necessary to conserve waters for water supplies, propagation of fish and aquatic life, recreational purposes and agricultural/industrial uses. The primary authority for the implementation and enforcement of the CWA rests with the EPA.

The Act as administered by EPA and other federal agencies, authorizes water quality programs, requires federal effluent limitations/state water quality standards, and requires permits for pollutant discharge into “Waters of the United States.”

Section 401 of the CWA: 33 USC §§1311-1313, 1315-1317 – This section of the CWA is administered by a specific state Regional Water Quality Control Board (RWQCB). For the Victorville area, the RWQCB administers the Section 401 CWA statutes. This agency reviews projects and issues permits for those actions which may result in wastewater discharge or in any way affect state water quality. The RWQCB also ensures that established state water quality standards would not be violated by the discharge of pollutants into waters of the U.S.

Where “Waters of the United States (WUS)” are affected by projects, specific CWA Section 404 permitting by USACE is often required. For affecting projects meeting certain criteria, application for required permits under the Nationwide Permit Program (NWP) administered by USACE can reduce permit processing time. In order to qualify under the NWP program, a project must be certified under Section 401 of the Clean Water Act or a waiver of certification must be obtained. Some actions affecting WUS can qualify for such a waiver if certain precautions are taken during project implementation. Otherwise, an application and requisite fees for a Water Quality Certification must be submitted to the RWQCB through their Lake Tahoe, California Office.

Current VV2 Project design proposes to avoid any and all impacts to WUS by placing all Project features (i.e., transmission line towers, access roads) well outside of jurisdictional areas. If, at a later date, circumstances change such that it is determined that WUS may be affected by the VV2 Project, an agency review and issuance of a Water Quality Certification, or a Waste Discharge Permit, are likely to be required by the RWQCB.

Section 402 of the CWA: 33 USC §1342 – This amendment to the CWA established the National Pollutant Discharge Elimination System (NPDES) to authorize EPA issuance of point source discharge permits. Although originally administered by the EPA under the requirements set forth in the Fish and Wildlife Coordination Act, this regulatory program has been turned over to state administration.

The California State Water Resources Control Board (SWRCB) oversees CWA Section 402 permitting in the vicinity of the VV2 Project. As soil disturbance would be generated by the proposed VV2 Project, a SWRCB review and a NPDES Construction Activities Storm Water General Permit would likely be required. To complete this regulatory process, preparation of a Notice of Intent and accompanying Stormwater Pollution Prevention Plan (SWPPP) is necessary, which are then submitted for agency approval.

Section 404 of the CWA: 33 USC §1344 – This section of the CWA is administered by the U.S. Army Corps of Engineers (USACE) and is used in the regulation of discharged material and/or placement of dredged/fill material into WUS.

The USACE has created a series of nationwide permits (NWP) that authorize certain activities within WUS, provided that the proposed activity does not exceed certain impact thresholds. Per this nationwide program, steps must also be taken to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts.

For projects that exceed identified thresholds for nationwide permits, individual permits under Section 404 of the Clean Water Act are considered for issuance by USACE. The Los Angeles District Office of the USACE oversees CWA Section 404 regulatory permitting for projects in the Victorville area.

The ephemeral washes occurring within the area of effect of the VV2 Project are tributaries of the Mojave River during precipitation events and as such, are classified as WUS. Current VV2 Project design proposes to avoid any and all impacts to WUS by placing all Project features (i.e., transmission line towers, access roads, staging areas, etc.) well outside of these jurisdictional areas. As noted above, if at a later date, it is determined that avoidance of impacts to “Waters of the United States” is not possible, CWA Section 404 permitting would be required. Any construction of roads, work staging areas or Project utilities placed within the jurisdictional washes would generate the need to acquire a CWA Section 404 Permit, either through the nationwide or individual permit systems the USACE administers.

Fish and Wildlife Coordination Act (FWCA) 16 USC §§661- 666 (1934, as amended) – This congressional act is intended to ensure that wildlife conservation receives equal consideration and is coordinated with other features of water resource development through planning and coordination of wildlife conservation. The act mandates consultation with the USFWS for any federal agency project that may modify waters or channel of a body of water.

The consultation ensures that adequate provisions are made for the conservation and management of wildlife resources and habitat. The use of lands or interests for wildlife

conservation must be in accordance with plans approved jointly with the administering department or agency, the Secretary of the Interior and the state agency exercising wildlife resource administration.

As VV2 Project design currently proposes to avoid all impacts to WUS, a review by the USFWS would not be expected under this regulatory program. Should it be determined at a later date that Project impacts to WUS are unavoidable, a review by the USFWS under this program likely would be required.

Migratory Bird Treaty Act (MBTA) 16 USC §§703-711; 50 CFR Subchapter B (1918, as amended) – Compliance with this legislation is maintained with several treaties signed by the United States, Great Britain, Mexico, Japan, and countries of the former Soviet Union to prohibit the pursuit, capture, killing, and/or possession of any migratory bird, nest, egg or parts thereof, except as provided by statute. The USFWS maintain a list of designated migratory birds occurring in the United States.

VV2 Project implementation has been identified to have a potential to impact migratory bird species. As precautionary mitigation, preconstruction nesting bird surveys would be conducted immediately prior to any earth-moving or vegetation disturbing activities during the nesting season (generally 1 Feb. through 31 August) to ensure that nesting bird species protected by the MBTA are not actively nesting at the time. If active bird nests are found, the area immediately supporting these nests would be avoided until seasonal nesting is complete. Other biological monitoring provisions for Project construction phase have also been prescribed to ensure that these activities do not impact migratory bird flight in the Mojave River corridor and to pursue appropriate MBTA direction regarding the removal of any Common Raven nest discovered at the proposed facility.

National Environmental Policy Act (NEPA): 42 USC §4321 (1969, as amended) – This congressional act forms the basic national charter for protection of the environment. The Act provides for interdisciplinary agency review of proposals, allows for public involvement and determines the need for preparation of an Environmental Impact Statement (EIS). The process also facilitates the identification of mitigation measures which can minimize impacts to the human environment. The NEPA process summarily documents the consequences of a considered action and all options analyzed by the reviewing federal agency. NEPA reviews are based upon the Council on Environmental Quality (CEQ) regulations set forth at 40 C.F.R. §§1500-1508.

Portions of the proposed VV2 Project would fall under the jurisdiction of one or more federal agencies (i.e., USACE and EPA). Each of these federal agencies has NEPA compliance requirements relative to permits issued. When such multi-agency federal permitting actions are considered in the NEPA process, a “lead federal agency” is generally required to “determine whether the proposed action would significantly affect the quality of the human environment,” thus necessitating the preparation of an EIS. The preparation of a NEPA document is also generally required prior to permit issuance by involved federal agencies for various regulatory permitting endeavors.

2.2 State

California Environmental Quality Act (CEQA): Title 14 California Code of Regulations (1970, as amended) – CEQA was established by the state legislature to inform both state and local governmental decision-makers and the public about significant environmental effects of proposed activities, to identify ways to avoid or reduce environmental impacts, and to disclose the reasons why a project is approved if significant environmental impacts would result. For California's public agencies, CEQA enables:

- The identification of significant environmental effects;
- The design of measures to avoid significant environmental effects, where feasible; or
- The design of measures which fully mitigate significant environmental effects.

Under the Warren-Alquist Act, the CEC has the sole jurisdiction among state (and local) agencies for power plant licensing, and the Application for Certification (AFC) prepared pursuant to the requirements of the CEC's power plant licensing process is a CEQA-equivalent document/process.

California Fish and Game Code (CFGC): Title 14 California Code of Regulations (1996, as amended) – California Fish and Game Code laws and regulations protect the state's diverse fish, wildlife and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. The CFGC also specifies the organization and regulatory powers of the California Fish and Game Commission, as well as the organization and general functions of the California Department of Fish and Game (CDFG).

Sections 1600-1603 of the CFGC – These sections of the CFGC, referred to as Streambed Alteration Regulations, address all changes to the natural flow, bed or bank, of any river, stream, or lake that support fish or wildlife resources. A stream is defined broadly as a body of water that flows at least periodically, or intermittently, through a channel that has banks, which supports fish or other aquatic biota. These areas are formally referred to as California Streambeds or "Waters of the State of California (WSC)".

Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Section 1601 governs public projects, while Section 1603 governs private discretionary actions. Public and private interests are required to submit a notice of intent and apply for a "Streambed Alteration Agreement" for any project that may impact WSC. The CDFG has maintained a "no net loss" policy regarding impacts to WSC, generally requiring compensation for loss of such waters in Streambed Alteration Agreements.

Because the ephemeral washes that occur within the proposed VV2 Project area support wildlife resources and meet the criteria for WSC, these regulations are considered applicable to the VV2 Project. Current VV2 Project design proposes to avoid all surface disturbance to state jurisdictional areas by placement or construction of Project components (i.e., transmission line towers, access roads, staging areas, etc.) outside of WSC. Where necessary, directional boring would be used to pass under one state jurisdictional drainage located along a portion of the sanitary wastewater pipeline in Segment 1.

Section 1900-1913 of the CFGC – These sections of the CFGC are commonly referred to as the Native Plant Protection Act (NPPA). It includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in CESA. However, the list of species afforded protection in accordance with the NPPA includes those plants listed as rare and endangered under CESA.

NPPA provides limitations on take and transport of identified plants as follows: “no person will import into this state, or take, possess, or sell within this state” any rare or endangered native plants, except in accordance with the provisions outlined in the act. Further, if a landowner is notified by the CDFG pursuant to Section 1903.5 that a rare or endangered plant is growing on his/her property, the landowner shall notify the CDFG at least 10 days prior to impacting land uses to allow the CDFG to salvage the plants.

A subpart of NPPA specifically applies to Desert Native Plants, including Joshua trees (*Yucca breviflora*) and all species of cacti. Per the latter subpart of the NPPA, official tags and seals issued by the San Bernardino County Agricultural Commissioner are required to transport cacti and Joshua trees on public roadways. As Joshua trees are anticipated to be affected by the proposed VV2 Project, these regulations may be applicable for any transplantation plans designed for the VV2 Project.

Sections 2050 – 2098 of the CFGC (1984, as amended) – These sections of the CFGC, known as the California Endangered Species Act (CESA), are similar to and based on statutes associated with the federal ESA. However, this law is administered by the CDFG according to direction in the California Fish and Game Code and specific legislation adopted by California. CESA provides for the protection and management of flora and fauna listed by state authorities as threatened or endangered, and those species identified as candidates for such listing. Accordingly, CESA prohibits the take of state-listed species except as otherwise provided in this state law.

State lead agencies are required to consult with the CDFG to ensure their actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat. Federal agencies usually also confer with CDFG regarding potential impacts to CESA-listed species associated with federal permit authorizations. Where a species is listed under both the ESA and the CESA, the incidental take allowance and mitigation provisions specified in the ESA Section 7 biological opinion or ESA Section 10 Permit issued by the USFWS are generally accepted as sufficient in fulfilling the intent of CESA.

As the state and federally listed-threatened desert tortoise occurs in the VV2 Project area, the ESA Section 7 biological opinion, mitigation measures and incidental take statement issued for the proposed action is expected to be adopted by CDFG as fulfilling regulatory needs associated with CESA.

In addition, the state listed-threatened Mohave ground squirrel has been assumed by the Project proponent to occur with the VV2 Project area. The species was not found during an initial trapping effort within the Project site; however, the CDFG has reported the species in the vicinity of the Project area. Thus, a CESA Section 2081 incidental take permit will be obtained

for the Project based on the assumed presence of the species, pursuant to CESA. Mitigation measures specified in this incidental take permit would be incorporated into the approved Project design.

Section 2081 of the CFGC – This section of the CFGC specifies the specific exceptions to prohibitions on taking designated threatened and endangered species per CESA. Resulting incidental take permits or memoranda of understanding issued by the CDFG authorize individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California.

These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFG.

The CDFG determines necessary take minimization and mitigation measures based on the best scientific information reasonably available. This determination includes consideration of the species’ continued capability to survive and reproduce.

As the state-threatened Mohave ground squirrel two is anticipated to be affected by the proposed VV2 Project, these CESA Section 2081 incidental take regulations are considered applicable.

Section 3505.5 of the CFGC – This section of the CFGC, referred to as the Protected Raptor Regulations, makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey). This section of the CFGC also prohibits the take, possession, or destruction of nests or eggs of any bird-of-prey.

As a bird-of-prey (i.e., burrowing owl) may be affected by the proposed VV2 Project, these regulations are considered applicable to the Project.

Global Warming Solutions Act (2006) – This recently signed state law is considered the nation’s most ambitious effort to combat global warming associated with certain air emissions. The intent of the Act is to limit California’s global warming emissions to 1990 levels by 2020 and to institute a mandatory compliance reporting system administered by the California Air Resources Board.

While specific program details have yet to be determined, the use of market mechanisms to provide emission reduction incentives to businesses while safeguarding local communities is planned. Regulations under this Act may be applicable to the VV2 Project.

2.3 Regional

City of Victorville Joshua Tree Ordinance – The City of Victorville regulates all new development projects proposed within its jurisdiction through the issuance of grading permits.

The City's municipal code Title 13 (Public Peace, Safety, and Morals), Chapter 13.33 (Preservation and Removal of Joshua Trees) reads as follows:

"It is determined by the city council that proper and necessary steps be taken in order to protect and preserve, to the greatest extent possible, Joshua trees in all areas of the city so as to preserve the unique natural desert environment throughout the city and for the health, safety and welfare of the community. (Ord. 1224 § 1 (part), 1988)."

In addition, Title 15 (Buildings and Construction), Chapter 15.06.080 (Grading), Section 2, Subsection A, Number IV reads as follows:

"All Joshua trees, as per Chapter 13.33 of the Victorville Municipal Code, shall be indicated by showing the exact center of its trunk as established by a licensed surveyor. Its tag number, trunk diameter and height must be indicated. The health and proposed disposition of the tree must be indicated.

The application shall include a detailed plan for protecting, preserving, relocating the tree, which may be affected by the proposed grading. The details of which shall conform to Chapter 13.33 of the Victorville Municipal Code as amended."

Because Joshua trees within the City of Victorville zone of influence would be affected by implementation of the proposed VV2 Project, these regulations are considered applicable to the proposed Project.

City of Hesperia Joshua Tree Ordinance – The City of Hesperia regulates all new development projects proposed within its jurisdiction through the issuance of grading permits.

The City's municipal code Title 16 (Development Code), Article II, Chapter 16.24.120 (Scope of Provisions) reads as follows:

"The provisions of this article shall apply to all desert native plants growing on private land within the city and to desert native plants growing on public land owned by the city, county of San Bernardino or the state of California, except as specified by Article I of this chapter and as specified by this section.

Except as otherwise provided by this chapter, any person who willfully removes, or harvests or transplants a living desert native plant shall first obtain approval from the county to do so in accordance with the procedures set forth in Sections 16.24.040 or 16.24.110 et seq. (Ord. 250 (part), 1997; SBCC § 811.0405)"

Chapter 16.24.150 lists the following plant species with stems two inches or greater in diameter or six feet or greater in height as protected:

1. *Dalea spinosa* (smoketree);
2. All species of the family *Agavaceae* (century plants, nolin, yuccas);

3. All species of the genus *Prosopis* (mesquites).
4. Creosote Rings, ten feet or greater in diameter.
5. All Joshua trees (mature and immature).
6. All plants protected or regulated by the State Desert Native Plants Act (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits (Ord. 250 (part), 1997; SBCC § 811.0420).

Because Joshua trees within the City of Hesperia zone of influence would be affected by implementation of the proposed VV2 Project, these regulations are considered applicable to the proposed Project.

West Mojave Plan Amendment to the California Desert Conservation Area Plan – Over 13 years in the making, the West Mojave Plan (Plan) signed by the Bureau of Land Management (BLM), the City of Barstow and San Bernardino County forms the basis for the largest habitat conservation plan (HCP) ever developed in the United States. This amendment to the BLM's 1980 California Desert Conservation Area (CDCA) Plan encompasses 9.3 million acres within San Bernardino, Kern, Los Angeles, and Inyo counties and was released in 2005 with a Final Environmental Impact Statement and Environmental Impact Report (BLM 2005a).

The Plan provides a comprehensive regional strategy to conserve and protect more than 100 listed or sensitive wildlife species and their habitats on public lands in the region, including the threatened desert tortoise and Mojave ground squirrel. As envisioned, the Plan provides a streamlined program for various public agencies and private parties to comply with requirements of the State and Federal ESAs. Conceptually, this is to be accomplished through the use of a private land development fee and public land conservation programs for specifically-covered special-status species (desert tortoise, Mojave ground squirrel, Le Conte's thrasher, burrowing owl, etc.).

The Plan forms the basis for a multi-agency HCP anticipated to be completed by 2008 by State and local governments. When completed, this HCP would ideally streamline CESA and ESA incidental take permitting. The CDFG is currently working with County jurisdictions to devise conservation measures that would fulfill all requirements of the CESA. To date, the public land portion of this process has been completed; conservation area boundaries have been identified, species' survey requirements specified, and implementing conservation actions designed.

The requisite documents for the forthcoming HCP, including an Implementing Agreement, would be accompanied by additional environmental reviews under the NEPA and/or CEQA, as would be determined necessary by all participating agencies. Incidental take permitting for the VV2 Project is anticipated to be completed prior to the adoption release of this HCP by the State and local governments and its streamlined permit approach.

However, translocation of desert tortoises occurring in proximity to the proposed energy generation facility has been determined necessary for the VV2 Project. The specifics of this desert tortoise relocation action are to be fully detailed in a formal VV2 Desert tortoise Translocation Plan to be approved by USFWS and CDFG.

3.0 PROJECT DESCRIPTION

3.1 Overview

The Proposed Action includes the construction and operation of a new natural gas-fired combined cycle power plant with a thermally integrated solar-thermal facility located on primarily undeveloped lands within the northernmost portions of the City, a short distance north of the Southern California Logistics Airport (SCLA), formerly George Air Force Base (GAFB) and approximately 0.5 mile west of the Mojave River. The Project would also include the construction of several new linear features, including the following: 1) a 4.3-mile 230 kV above-ground electrical transmission line Right of Way (ROW) connecting to the High Desert Power Plant (HDPP) transmission path; 2) 5.7 miles of new transmission line in an existing utility ROW involving the installation of new lines on existing transmission structures with available space and new transmission towers in three locations where the VV2 ROW is crossed by other transmission lines, 3) approximately 11 miles of new 230 kV above-ground transmission line in an existing utility ROW and relocation of a 6.6-mile 115kV above-ground electrical transmission line within the same existing utility ROW; 4) a 1.5-mile reclaimed water supply pipeline delivered from the VVWRA facility; 5) a 1.4-mile sanitary wastewater pipeline, 6) a natural gas supply pipeline, and 7) a backup water supply pipeline. The Project's natural gas and backup water supply pipelines interconnect with existing pipelines in roadways adjacent to the power plant site. Because the entire lengths of both are either on areas studied as part of the power plant site and thus covered by the discussion of the biological resources of the site, or are within the graded roadway areas that contain no biological resources, these pipelines are not discussed further in this report. Potable water required by the Project will be provided via an onsite well. The initial reach of the reclaimed water and sanitary wastewater pipelines will be installed together within a shared 50-foot ROW trench located adjacent to the northernmost portion of the proposed above-ground electrical transmission line in Segment 1. Within the unshared areas of the pipeline ROWs, the construction footprint would be 25 feet wide along the length of each line respectively. The associated Project components are described separately below. See Appendix 1, Map 2 for a representation of the orientation and layout of all Project facilities. The Project is anticipated to commence construction activities during the summer of 2008 and commercial operations are expected to begin in the summer of 2010.

The EPA is expected to serve as the federal lead agency for the Project and initiate Section 7 consultation with the USFWS for take of the desert tortoise. CDFG is expected to adopt the Section 7 biological opinion for desert tortoise to comply with CESA incidental take requirements for desert tortoise. A CESA Section 2081 take permit from the CDFG for the Mohave ground squirrel would also be required for the Project. Federal Clean Water Act permits under Section 404 and Section 401, and a state Stream Alteration Agreement under Fish & Game Code Section 1602, are not anticipated to be necessary at this time because current VV2 Project plans are designed to avoid any and all impacts to State Waters and

Waters of the United States. If, at a later date, it is determined that impacts to these jurisdictional areas are unavoidable, the appropriate requisite state and federal permits referenced above would be obtained.

3.2 Project Description by Area and Component

3.2.1 Power Plant

The power plant would generally consist of two combustion turbine-generators, two heat recovery steam generators, one steam turbine-generator, a 250-acre solar thermal collection field, one solar steam boiler, and associated auxiliary systems and equipment (see Appendix 1, Map 2). A new 230 kV switchyard is also included in the power plant site. The power plant would occupy a total footprint (inclusive of fill slopes and access) of approximately 338 acres and be permanently fenced with approved desert tortoise exclusion fencing. Approximately 285 acres of this area is either presently occupied by desert tortoise or provides potentially suitable habitat for the desert tortoise and Mohave ground squirrel. The remaining 53 acres is either currently developed or disturbed. In addition to the footprint of the power plant, an additional combined total of 50 acres for two construction equipment staging areas would also be required. These areas are described separately below. All areas within the power plant site and the two construction staging areas would be subject to permanent impacts. No avoidance or restoration areas are proposed for the power plant site.

Western Construction Staging Area

The western construction staging area would occupy a footprint of 30 acres located west of the power plant site. This area would be used for storing Project-related equipment; parking, staging, and maintenance of construction heavy equipment and personnel vehicles; and assembling power plant components. This staging area would be fenced throughout the Project construction phase with approved desert tortoise exclusion fencing. All areas within this 30-acre staging area are considered to be suitable, potentially-occupied desert tortoise habitat and potential Mohave ground squirrel habitat that would be subject to permanent impacts. Upon completion of construction of the power plant and use of this area, fencing would be removed and habitat restoration of this area would be implemented in accordance with agency approvals and methodologies.

Southern Construction Staging Area

The southern construction staging area would occupy a footprint of 20 acres and be located south of the power plant site (see Appendix 1, Map 2). Like the western construction staging area, this area would be used for storing Project-related equipment; parking, staging, maintenance of construction heavy equipment and personnel vehicles; and assembling power plant components. All areas within this 20-acre construction staging area are considered to be suitable, potentially-occupied desert tortoise habitat and potential Mohave ground squirrel habitat that would be subject to permanent impacts. This staging area would be fenced throughout the Project construction phase with approved desert tortoise exclusion fencing. Upon completion of construction of the power plant and use of this area, fencing would be

removed and habitat restoration of this area would be implemented in accordance with agency approvals and methodologies.

Linear Utility Features

The proposed Project would require the construction and installation of several required linear utility features. These include: 1) electrical transmission lines, 2) a reclaimed water pipeline, and 3) a sanitary wastewater pipeline. These linear features are described separately below.

Electrical Transmission Line

The VV2 Project includes the construction of a new above-ground 230kV electrical transmission line linking the proposed Project switchyard to an existing SCE electrical transmission line located south of the site (see Appendix 1, Map 2). Additionally, relocation of an above-ground 115 kV electrical transmission line would be required for one area (a 6.6-mile portion of Segment 3). The Project would require the installation of approximately 275 new towers and the stringing of additional lines attached to the new and existing towers along existing SCE electrical transmission line easements located south of the power plant site. The total length of the electrical transmission line is approximately 21 miles. The electrical transmission line linear feature is divided into three segments numbered sequentially from north to south. The total combined footprint of the electrical transmission line, inclusive of the permanent disturbance to tower sites (footings) and construction of new required access and spur roads, would total 5 acres. Tower footings would be drilled with an auger to minimize the permanent ground disturbance to the greatest extent possible. Temporary impacts, totaling a combined 59 acres, would occur around and adjacent to each tower site, as these areas would be required for the assembly of the tower. Appendix 3 provides the construction drawings and associated impacts resulting from each type of tower proposed for the various areas of the Projects linear segments. These temporary impacts are anticipated to be in the form of crushing and trampling of vegetation by tower components, personnel, heavy equipment and vehicles. Other required staging of equipment and vehicles would be within pre-determined clearly marked previously disturbed areas. No impacts are expected as a result of equipment staging. These proposed actions are detailed separately by segment below.

Segment 1

Segment 1 of the Projects proposed electrical transmission line is approximately 4.3 miles in length and links the project site to an existing SCE electrical transmission line, located south of the HDPP (see Appendix 1, Map 2). Segment 1 would require the construction and placement of 31 new single tubular pole electrical transmission line towers and the stringing of approximately 4.3 miles of new lines along a new proposed transmission line ROW. The total construction ROW for Segment 1 would be up to 150 feet in width in the areas that the transmission line and the two pipelines are located adjacent to one another, up to 125 feet in width in the areas that the transmission line and only one pipeline are adjacent, and 100 feet in width for the areas of the transmission line only. In the areas where the pipelines are co-located

and away from the transmission line, the construction ROW would be 50 feet in width. In the areas where the pipelines are not co-located and are away from the transmission line, the ROW would be 25 feet in width. Additionally, portions of Segment 1 would also require the construction of a single dirt access/patrol road located somewhere within the 100-150 foot ROW. This new access/patrol and necessary adjacent spur roads would be approximately 16 feet in width and a combined total length of approximately 7,200 lineal feet (~1.7 miles). Within the unshared portions of Segment 1 (the approximate southern 2/3), only the actual tower/pole locations (approximately 50 square feet each), associated access/patrol/spur roads, and areas where the equipment would be staged and towers assembled would require any type of site disturbance. Each tower would generally be assembled lying on their sides adjacent to the footprint of each tower construction site. This would require that the assembly to take place on previously undisturbed/natural areas. The assembly would likely result in the crushing of vegetation by tower components, personnel, and vehicles. This specific portion of the associated Project impacts (i.e., tower assembly) does not require grading or removal of vegetation and is therefore considered temporary. Each tower site would require 13,500 feet² of construction and assembly area and access resulting in a total of approximately eight acres of temporary impact required for tower assembly in Segment 1 (see Appendix 3). Much of the areas between the tower sites would be avoided and therefore remain undisturbed. The total disturbance footprint within Segment 1, inclusive of the pipeline ROWs, the tower sites, the tower staging/assembly areas, the access/patrol roads and spur roads would be approximately seven acres (approximately three acres of disturbed/developed areas have been deducted from the approximate ten total acres) of permanent loss of habitat and nine acres of temporary loss of habitat.

Segment 2

Segment 2 is 5.7 miles in length beginning where Segment 1 ties into the existing HDDP transmission line ROW and ending at the SCE Victor Substation to the south (see Appendix 1, Map 2). Segment 2 is entirely within an existing electrical transmission line corridor, approximately 160 feet in width and currently contains four to five existing power lines. This portion of the Project would require the stringing of approximately 5.7 miles of new electrical lines attached to existing transmission line towers. Six new lattice-style towers would also be constructed within this existing ROW in order to pass under crossing existing transmission lines in several locations in the northern portion of this segment. Each tower site would require a permanent disturbance footprint of approximately 12 feet², totaling approximately 114 feet² of permanent impacts resulting from tower footing installation. Each tower site would also require an estimated 100 feet wide by 130 feet long (13,000 ft²/each), totaling 1.8 acres of temporary disturbance area (see Appendix 3). Additionally, two line pulling areas would be required in Segment 2, each approximately 40 feet wide by 200 feet in length (8,000 ft²) and totaling approximately 0.36 acre of associated temporary surface disturbance impacts. In addition to the tower sites, approximately 300 feet of access roads (16 feet wide) would also be required resulting in an estimated permanent road footprint of 4,800 feet². The total disturbance footprint within Segment 2, inclusive of the six new tower construction sites (684 feet² or 0.02 acres); two line pulling areas (0.4 acre); construction, staging, and access areas (0.36 acre) would be an estimated 0.1 acre of permanent disturbance and two acres of temporary disturbance to natural

topography, soils, and vegetation. The remaining natural areas within this 5.7-mile segment would be avoided by any Project related disturbance, as existing access roads would be used for transportation, parking and staging where necessary. No federal or state jurisdictional areas would be disturbed.

Segment 3

Segment 3 links the SCE Victor Substation to the SCE Lugo Substation to the south (see Appendix 1, Map 2). Segment 3 is approximately 11 miles in length and located within an existing electrical transmission line corridor currently approximately 160 feet in width. This segment contains three to five existing electrical transmission lines. This portion of the Project would require the construction of a total of 99 new 230 kV lattice-style transmission line towers and 139 new 115 kV single tubular poles located along varying parallel alignments within the existing transmission line ROW; the new 115 kV poles would be used as part of relocation of a 115-kV line that currently exists in the area where the new 230 kV towers would be constructed. The 115kV towers would be constructed through the approximate 6.6-mile northernmost area of Segment 3 and would consist of single poles requiring an estimated 6.3 feet² of permanent disturbance and an estimated 6,000 feet² of temporary disturbance for each of the 139 pole sites (see Appendix 3). The 99 230kV transmission line towers would be lattice-constructed structures each having four footings, resulting in 114 feet² of permanent disturbance and 13,000 feet² of temporary disturbance for each tower site (see Appendix 3). Stringing of one new electrical line on the new towers would also be required as would the use of seven line pulling areas, each located within existing dirt access roads or previously disturbed areas. The same tower assembly methods as in Segments 1 and 2 (i.e., assembled on their sides) would be used for the new tower sites in Segment 3. No new access roads are proposed for this segment, as existing dirt access roads would be utilized. The total disturbance footprint within Segment 3 inclusive of the 238 new tower sites, adjacent assembly areas, and off-road access/equipment and construction staging area would be an estimated 0.3 acres of permanent disturbance and 55 acres of temporary disturbance to natural topography, soils, and vegetation. The remaining areas within this 11-mile segment would be avoided by Project related disturbance. No federal or state jurisdictional areas would be disturbed.

Reclaimed Water Pipeline

The Project would require the construction and installation of a new 1.5-mile underground reclaimed water pipeline in Segment 1 linking the power plant to the VVWRA facility to the southeast (see Appendix 1, Map 2). The ROW required for installation of the reclaimed water pipeline would be 25 feet in width and located immediately adjacent to the electrical transmission line ROW in some areas and adjacent to the Project's sanitary wastewater line in other areas. The construction and installation of the reclaimed water line would be concurrent with the installation of the Projects sanitary wastewater pipeline described below. The total disturbance footprint associated with the reclaimed water pipeline is expected to be approximately five acres. No federal or state jurisdictional areas are present along the reclaimed water pipeline route; therefore jurisdictional areas will not be impacted.

Sanitary Wastewater Pipeline

The Project would also require the installation of a new 1.25-mile underground sanitary wastewater pipeline in Segment 1 linking the power plant to the VVWRA facility to the southeast. The sanitary wastewater pipeline ROW would be 25 feet in width and located immediately adjacent to the electrical transmission line ROW in some areas and adjacent to the reclaimed water line in others. The installation of this feature would be conducted concurrently with the installation of the reclaimed water pipeline described above. The total disturbance footprint associated with the sanitary wastewater pipeline is expected to be approximately 4 acres. Two drainages are present along the sanitary wastewater pipeline route. Disturbance to these drainages will be avoided through directional boring the pipeline under the drainage or by avoiding the crossing entirely.

4.0 PROJECT LOCATION

4.1 General Location

Project site is generally located in the northern portion of the City of Victorville corporate boundaries. Portions of the Project area (i.e., Segments 2 and 3 of the electrical transmission line) traverse portions of the City of Hesperia as well as Victorville. These areas are described separately in detail below.

4.1.1 Power Plant and Construction Staging Areas

The proposed VV2 Project site, inclusive of the power plant site and two adjacent construction staging areas, would be located on a collective approximate 388 acres of primarily undeveloped lands within the Mojave Desert north of the SCLA and in the northern portion of the City of Victorville, San Bernardino County, California (see Appendix 1, Map 1). This location does not include the associated linear utility features which are discussed separately below. The legal description of this area of the Project site is Sections 2 and 11, in part, of Township 6 North, Range 5 West, San Bernardino Base Meridian (USGS 7.5' Helendale and Victorville Northwest Quadrangles).

The power plant site is located at the northeast corner of Colusa and Helendale Roads. The two adjacent construction staging areas would be located to the west (30 acres) and south (20 acres) of the power plant site, one north of Colusa Road and west of Helendale Road; the other south of Colusa Road and east of Helendale Road.

Lands adjacent to the power plant and staging areas consist primarily of undisturbed natural open space largely supporting the same Mojave creosote bush scrub vegetation community that is present on the site. A few rural home sites and dirt roads are also present in the areas surrounding this portion of the Project. The Mojave River is located approximately 0.5 mile east of the eastern edge of the power plant site.

4.1.2 Linear Utility Features

As discussed above, the proposed Project also includes several associated linear utility features (see Appendix 1, Map 2). These include a 230 kV electrical transmission line, an underground reclaimed water pipeline, and an underground sanitary wastewater pipeline. The reclaimed water pipeline and sanitary wastewater pipeline are located between the power plant site and the VVWRA facility to the south. The locations of the pipelines are within Sections 2, 11 and 12 of Township 6 North, Range 5 West San Bernardino Base Meridian (USGS 7.5' Helendale and Victorville Quadrangles). The electrical transmission line is divided into three connecting segments beginning at the power plant site and ultimately ending at the SCE Lugo Substation to the south. These segments are described separately below:

Segment 1

Segment 1 of the linear utility features begins at the proposed power plant site and ends south of the HDPP (see Appendix 1, Map 2). Both Project pipelines described above are located within or near a portion of the proposed alignment of Segment 1. The reclaimed water line and a portion of the electrical transmission line are also partially located within the VVWRA facility. The legal description of Segment 1 is Sections 2 and 11, 12, 13 and 24, in part, of Township 6 North, Range 5 West, San Bernardino Base Meridian (USGS 7.5' Helendale, Victorville and Victorville Northwest Quadrangles).

Lands adjacent to Segment 1 consist primarily of undisturbed natural open space largely supporting the same Mojave creosote bush scrub and desert saltbush scrub vegetation community that are present on the site. The VVWRA is located immediately adjacent to areas of Segment 1 as are a few rural home sites and dirt roads are also present in the areas surrounding this portion of the Project. At the closest point, the Mojave River is located immediately adjacent to areas of Segment 1.

Segment 2

Segment 2 begins at the tie in of Segment 1 to the existing HDPP transmission line ROW and ends at the SCE Victor Substation to the south (see Appendix 1, Map 2). The legal description of Segment 2 is Sections 1, 11, 14 and 23 of Township 5 North, Range 5 West; and Section 31 of Township 6 North, Range 4 west, San Bernardino Base Meridian (USGS 7.5' Victorville Quadrangles).

Lands adjacent to the existing transmission line corridor in Segment 2 consist primarily of undisturbed natural open space largely supporting the same Mojave creosote bush scrub vegetation community that is present on this area of the site. A few residential tracts are also located immediately adjacent to portions of Segment 2.

Segment 3

Segment 3 begins at the SCE Victor Substation and ends at the SCE Lugo Substation to the south (see Appendix 1, Map 2). This segment is approximately 11 miles in length and traverses southwest Victorville as well as a portion of the City of Hesperia. Segment 3 crosses Interstate 15 and the Southern California Aqueduct. The legal description of Segment 3 is T5N, R5W, S22 (USGS 7.5' Adelanto, California Quadrangle); T5N, R5W, S22, 26, 27, and 35, San Bernardino Base Meridian (USGS 7.5' Baldy Mesa Quadrangle); T5N, R5W, S35; T4N, R5W, S2,11,13, 14, 24, 25, and 36; T4N, R4W, S31; T3N, R5W, S1; T3N, R4W, S6, San Bernardino Base Meridian (USGS 7.5' Hesperia California Quadrangle); and T3N, R5W, S1,2,11, and 12, San Bernardino Base Meridian (USGS 7.5' Silverwood Lake Quadrangle).

Lands adjacent to the existing electrical transmission line corridor in Segment 3 consist of a mix of natural open space largely supporting Mojave creosote bush scrub and Mojave juniper

woodland and scrub vegetation communities, rural residential housing, and residential tract housing.

4.2 General Physiography

The Project site exhibits flat to slightly hilly terrain. Relatively small rolling hills are located along the eastern and southern areas of the site. Portions of Segment 1 of Project's electrical transmission line corridor intersect with 40 small to moderate-sized ephemeral washes which drain eastward into the Mojave River (see Appendix 1, Map 7). Additionally, 10 small drainages were delineated within Segment 2 and five small drainages, including Oro Grande Wash, in Segment 3. The western edge of the Mojave River is located approximately 0.5 mile east of the eastern edge of the power plant site. At the closest point, the edge of the river is located within approximately 50 feet of the Project's the reclaimed water supply line (in the portion of the reclaimed water pipeline route that is within the VVWRA's fenced facility). The overall highest elevation of the all of the site features combined is 3,720 feet above mean sea level (MSL) and located at the southern terminus of Segment 3 at the tie in to the Lugo Substation. The site's lowest elevation is 2,600 feet above MSL and located in the vicinity of where the reclaimed water line enters the VVWRA plant; the lowest elevation on the power plant site is 2,730 feet above MSL adjacent to the site's eastern boundary. Unimproved dirt roads and trails occur throughout the area of the plant site and along the pipeline routes and Segment 1 of the transmission line route.

4.2.1 Power Plant Site

The power plant site (including access roads and areas that will be disturbed by Project grading activities but are outside the area where Project facilities will be located) occupies 338 acres and is located north of the SCLA and extends north and east from the intersection of Colusa Road and Helendale Road (see Appendix 1, Map 2). The western portions of the power plant site are generally flat with relatively little variation in topography, although elevations drop off in the easternmost portions of the site closer to the Mojave River. Thus, the site drains to the east into the Mojave River. The highest elevation on the power plant site is approximately 2,800 feet above MSL, while the lowest elevation is about 2,780 feet above MSL. There are no blue-line streams or drainages mapped within the boundaries of the power plant site. One blue line stream is located off site, to the east, approximately 300 feet east of the southeastern corner of the site. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. There currently are a few scattered residences on the power plant site linked by several named and unnamed dirt roads; (the City of Victorville has purchased or is in the process of purchasing the currently residential parcels). The nearest off-site residence is located approximately one mile west of the site on Colusa Road. Colusa Road serves as the power plant site's southern boundary, while Helendale Road serves as the plant site's western boundary.

4.2.2 Western Construction Staging Area

The western construction staging or "laydown" area (which also will be used for parking) is located along the north side of Colusa Road, west of the intersection of Colusa Road and Helendale Road and west of the power plant site (see Appendix 1, Map 2). The terrain over this

portion of the site is flat with little variation in topography. The elevation of this area is approximately 2,780 to 2,770 feet above MSL. Like the power plant site, this site drains to the east into the Mojave River. There are no blue-line streams or drainages located on this area of the site. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. There are no structures or dirt roads in this area of the site. Colusa Road serves as the western staging area's southern boundary. Helendale Road runs north-south, approximately 400 feet, east of the nearest edge of the western construction staging area.

4.2.3 Southern Construction Staging Area

The southern construction staging area is located on the south side of Colusa Road, southeast of the intersection of Colusa Road and Helendale Road and immediately adjacent to the south of the power plant site (see Appendix 1, Map 2). The terrain present within this area varies from relatively flat to gently sloping hills. The elevation of this area is approximately 2,780 to 2,770 feet above MSL. There are no blue-line streams or drainages located on the southern staging area. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. No structures occur in this area. One unsurfaced road occurs in this area.

4.3 Project Linear Features

As illustrated in Appendix 1, Map 2, the Project's linear utility features include new electrical transmission lines, a sanitary wastewater pipeline, and a reclaimed water supply pipeline. The three transmission line segments are described separately below; the Project's other linear facilities (pipelines) all fall within the area covered by Segment 1 of the Project transmission line route and the physiographic setting description of Segment 1 immediately below includes information about the pipelines together with the information about transmission line Segment 1.

Segment 1

The terrain along Segment 1 varies from flat to moderately sloping hillsides. The elevation of this area ranges from approximately 2,600 to 2,800 feet above MSL. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. 40 jurisdictional dry washes are crossed by Segment 1. All but one of these washes drain into the Mojave River, which is located to the east of Segment 1. Portions of Segment 1 are located immediately adjacent to (within an estimated 50 feet) of the Mojave River in some areas.

Segment 2

The terrain along Segment 2 varies from flat to moderately sloping hillsides, and elevations vary from approximately 2,700 to 3,100 feet above MSL. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. Segment 2 crosses a total of 10 jurisdictional dry washes, most of which are small. These washes ultimately drain into the Mojave River.

Scattered homes are located in the vicinity, and several large subdivisions are being built near the transmission line corridor.

Segment 3

The terrain of along Segment 3 varies from relatively flat to moderately-sloping hills and valleys, with elevations from approximately 3,100 feet to 3,720 feet above MSL. Soils are generally a consolidated mix of loamy sands and lack rocky outcroppings. Segment 3 also bisects five jurisdictional drainages, including the named "Oro Grande Wash." This segment crosses several major roadways, including Bear Valley Road, Interstate 15, and Main Street (Hesperia). From Interstate 15 south, the corridor is frequently near or adjacent to residential neighborhoods or rural residences.

4.4 Biological Setting

The biological resources of the Project site and surrounding area are described below. This section includes: 1) a regional overview; 2) a general discussion of the Project vicinity (to a one-mile radius around the Project site); and 3) a focused discussion of the Project site including the power plant site, the two construction staging areas, and the various linear features (pipelines and transmission line route.). This description is followed by a detailed discussion of the botanical and wildlife resources present on and in the vicinity of the Project site, as well as the special-status species that occur, or have the potential to occur in the vicinity.

4.4.1 Regional Overview

The Project site, including its linear features is located in what is commonly referred to as the "Victor Valley." The Victor Valley is located in the western portion of the Mojave Desert. Spanning more than 32 million acres of land across four states, the Mojave Desert encompasses approximately 20 million acres of California. The west Mojave Desert lies in the rain shadow of the Transverse Ranges (i.e., San Bernardino and San Gabriel Mountains) where a diverse array of geologic features is exhibited. These include rocky hills, cliffs, alluvial fans, playas, bajadas, sand dunes, ephemeral washes, and its signature hydrologic feature: the Mojave River. The Mojave River has been called the "Upside-down River," as water flows underground for a considerable length of its distance toward an inland dry lake, rather than to the Pacific Ocean. Vegetation communities typical of upland areas within the Mojave Desert include, but are not limited to Mojave creosote bush scrub, Joshua tree woodland, desert saltbush scrub, and Mojavean juniper woodland and scrub.

The climate in the Victorville is typical of an arid desert. Clear, sunny skies prevail 95 percent of the time. Temperatures in the summer often exceed 100°F with low humidity. Fall and winter temperatures can fall below freezing. Snow may fall at times during the winter. Mean rainfall is 5.60 inches (in.) annually, with the bulk (mean 2.77 in.) occurring during the winter months of December, January, and February.

4.4.2 Project Vicinity

For the purpose of this report, the immediate vicinity of the VV2 Project is defined as the area within a one-mile radius of the power plant site and two construction staging areas and a 1,000-foot radius around all linear features (water, sewer, and transmission lines).

The vicinity of the power plant site, staging areas, and Segment 1 of the linear features consist primarily of natural open space lands largely vegetated with Mojave Creosote Bush Scrub. A limited number of disturbed and developed areas exhibiting structural developments are also present throughout the vicinity. Land uses in the vicinity include the SCLA, the VVWRA treatment facility, a small amount of rural residential and ranch-style housing, and agricultural development. The latter occurs primarily on the east side of the Mojave River. A network of paved and unsurfaced roads links the few scattered houses in the vicinity. The Project vicinity is also traversed by two existing multiple-product petroleum product pipelines owned and operated by Kinder Morgan Energy Partners. The scattered houses primarily occur on the power plant site (these will be removed as part of Project implementation) and on the east side of the Mojave River. There is only one off-site residence within one mile of the plant site (a horse ranch on Colusa Road slightly less than one mile west of the plant site). The petroleum pipelines occur just west and south of the power plant site and the electrical transmission line occurs at its southern edge.

The most prominent feature in the vicinity of the Project site is the Mojave River, situated approximately 0.5 mile to the east of the power plant site. The Mojave River supports above-ground water flow in this vicinity and flows north and east to its northern terminus at Soda Dry Lake, near Baker, California. Vegetation communities associated with this reach of the Mojave River include, but are not limited to southern willow scrub, cottonwood-willow woodland, and Mojave riparian forest.

A variety of sensitive biological resources are known to occur in the vicinity of the Project site. These include species associated with the Mojave creosote bush scrub, desert saltbush scrub, and cottonwood-willow riparian vegetation communities.

The plant site and laydown/staging areas are located outside of USFWS designated critical habitat for the desert tortoise, BLM habitat categorizations, and CDFG desert tortoise Crucial Habitat Areas. However, suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, and various other special-status wildlife species is present throughout the Project site. Very limited areas of marginally suitable habitat for several of the special-status plant species known to occur in the vicinity are also present intermittently throughout these areas of the site. Additionally, the site provides suitable habitat for the common wildlife species inhabiting this region of the Mojave Desert including, but not limited to, side-blotched lizard (*Uta stansburiana*), desert night lizard (*Xantusia vigilis*), Great Basin whiptail (*Aspidoscelis [Cnemidophorus] tigris tigris*), Great Basin gopher snake (*Pituophis melanoleucus deserticola*), coachwhip (*Masticophis flagellum*), Mojave rattlesnake (*Crotalus scutulatus*), verdin (*Auriparus flaviceps*), black-throated sparrow (*Amphispiza bilineata*), horned lark (*Eremophila alpestris*), cactus wren (*Campylorhynchus brunneicapillus*), common raven (*Corvus corax*), black-tailed jackrabbit (*Lepus californicus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), coyote (*Canis latrans*), and kit fox (*Vulpes macrotis*).

4.4.3 Power Plant Site

Two vegetation communities, Mojave creosote bush scrub and non-native grassland, are present on the power plant site (see Appendix 1, Map 6). Disturbed/developed areas are also

present. Dominant plant species within the Mojave creosote bush scrub portions of the site include white bursage (*Ambrosia dumosa*), creosote bush (*Larrea tridentata*), and cheesebush (*Hymenoclea salsola*). Joshua trees (*Yucca brevifolia*) and cacti (*Opuntia* spp.) are sparsely scattered across this area of the site. The areas of non-native grassland occur primarily in association with the scattered home sites and along road sides in some areas. These areas were formerly Mojave creosote bush scrub but were cleared of most of this natural community at some point in the past and now generally support largely barren, open areas that provide opportunities for weedy, disturbance-loving plant growth. Dominant plant species observed within these areas include short-pod mustard (*Hirschfeldia incana*), checkered fiddleneck (*Amsinckia tessellata*), red brome (*Bromus madritensis* ssp. *rubens*), schismus (*Schismus barbatus*), and storksbill (*Erodium cicutarium*).

Common wildlife species inhabiting the power plant site are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

4.4.4 Western Construction Staging Area

The terrain of the western construction staging area is flat, exhibiting very little variation in topography and with no existing structures or roads. One vegetation community, Mojave creosote bush scrub, is present; dominant plant species include white bursage, creosote bush, and cheesebush. Joshua trees and cacti are also sparsely scattered across this area of the site. Common wildlife species inhabiting this area of the site are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

4.4.5 Southern Construction Staging Area

The terrain of southern staging area is flat to gently sloping, small rolling hills; it contains no existing structures and one unsurfaced dirt road. One vegetation community, Mojave creosote bush scrub, is present; dominant plant species include white bursage, creosote bush, and cheesebush. Joshua trees are also sparsely scattered across this area of the site. One portion in the southeast of the staging area is densely vegetated and dominated by pencil cholla (*Opuntia ramosissima*). Common wildlife species inhabiting the southern construction staging area of the site are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

4.4.6 Linear Utility Features

These Project transmission line route is divided into three segments, each of which is described separately below. The discussion of Segment 1 encompasses the Project water supply and sanitary wastewater disposal pipeline routes which are in the same area as the transmission line.

Segment 1

Segment 1 of the VV2 Project transmission line extends approximately 4.3 miles to the point where it joins the existing transmission path that connects the HDPP to the SCE regional grid. The terrain that Segment 1 traverses varies from relatively flat to moderately-sloping hills and

valleys. Segment 1 also bisects 40 ephemeral washes at various locations that will not be disturbed. Plant communities occurring along Segment 1 include Mojave creosote bush scrub, Non-native grassland, and desert saltbush scrub. Dominant plant species within the areas of Mojave creosote bush scrub and non-native grassland are consistent with the species listed in the power plant site above, as are the wildlife species associated with these vegetation communities. The dominant plant species observed within the desert saltbush scrub areas included allscale (*Atriplex polycarpa*). Joshua trees are sparsely distributed along areas of this portion of the site. Disturbed and developed areas are also present along portions of Segment 1. Common wildlife species inhabiting this area of the site are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

Segment 2

Two vegetation communities, Mojave creosote bush scrub and desert saltbush scrub are present along Segment 2. Dominant plant species within the Mojave creosote bush scrub portions of the site include white bursage, creosote bush, and cheesebush. Joshua trees and cacti (*Opuntia* spp.) are sparsely scattered throughout the area of the Segment. Dominant plant species of the desert saltbush scrub include Allscale and four-winged saltbush (*Atriplex canescens*). Common wildlife species inhabiting Segment 2 are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

Segment 3

Plant communities occurring along Segment 3 include Mojave creosote bush scrub, nonnative grassland, Mojavean juniper woodland and scrub, and rabbitbrush scrub. Dominant plant species within the areas of Mojave creosote bush scrub and nonnative grassland are consistent with the species listed for the power plant site above, as are the wildlife species associated with these vegetation communities. In the area between Interstate 15 and Main Street, the Mojave greosote bush scrub transitions to Mojavean juniper woodland and scrub. California juniper (*Juniperus californica*) is the dominant species of this community, along with California buckwheat (*Eriogonum fasciculatum*), Cooper's goldenbush (*Ericameria cooperi*), and rubber rabbitbrush (*Chrysothamnus nauseosus*). In some previously disturbed areas, the rubber rabbitbrush (a pioneering species) becomes the overwhelming dominant. These areas are referred to as rabbitbrush scrub vegetation community. Joshua trees are also sparsely distributed along portions of Segment 3. Common wildlife species inhabiting this area of the site are consistent with, but not limited to, the species referenced above in the Biological Setting section of the Project Vicinity (Section 4.4.2).

5.0 METHODS

5.1 Literature Review

A literature review was conducted to identify sensitive biological resources known from the vicinity of the site. For the purpose of assessing the occurrence potential of sensitive biological resources, vicinity in this context is defined as areas within 10 miles of the Project site. The literature included a review of CDFG's Natural Diversity Data Base (CNDDDB) via a version 3.0.5

RAREFIND application (CDFG 2003); a review of the California Native Plant Society's (CNPS) *Rare and Endangered Vascular Plants of California, Soil Survey of San Bernardino County, California, Mojave River Area, California* (U.S.D.A. Soil Conservation Service 1986); and pertinent documents from the AMEC library. The CNDDDB review included all elements within the USGS 7.5' Adelanto, Baldy Mesa, Helendale, Hesperia, Silverwood Lake, Victorville and Victorville California Quadrangles. The review also included an overview of other biological surveys from the general vicinity (i.e., RBF Consulting [2005], Tierra Madre Consultants [1992], Tom Dodson & Associates [2003 & 2005]) and species accounts incorporated into the West Mojave Plan (BLM 2005a). Scientific nomenclature for this report follows standard reference sources: plant communities, Holland (1986) and Sawyer and Keeler-Wolf (1995); flora, Hickman (1993) and Munz (1974); butterflies, Emmel, Emmel and Mattoon (1998), McGinnis (1984); fish, Stebbins (1985, 2003); amphibians and reptiles, American Ornithologists Union (1998); birds, and Laudenslayer and Grenfell (1991); mammals.

5.2 Field Surveys

5.2.1 Biological Resource and Habitat Assessment

Field surveys conducted in support of this biological resources technical report included a general biological and habitat assessment and resource inventory in addition to focused surveys for the desert tortoise, Mohave ground squirrel, burrowing owl and rare plant species. In general, when conducted concurrent with surveys for the desert tortoise, these surveys involved transects spaced no more than 30 feet apart covering 100% of all areas of the Project site involving proposed ground disturbance, inclusive of the power plant site, the two staging areas, and Segments 1, 2 and 3 of the linear features. When conducted nonconcurring with the desert tortoise surveys, the general biological surveys involved walking transects of various widths over various areas of the site, buffer zone, and Zone of Influence (ZOI). Buffer zone transects were spaced 100' apart out to 500' from the edge of the various Project areas. ZOI transects around all of these areas were also performed at 100', 300', 600', 1,200' and 2,400' intervals, where possible, as required by the desert tortoise survey guidelines. A general habitat assessment was also conducted at the one mile radius mark around the power plant site and the two staging areas and 1,000' around Segments 1, 2, and 3 of the linear features where possible.

Field surveys were conducted on February 17, 2006; March 15-16, 17, 30-31, 2006; April 11, 18-19, 25-26, 2006; May 5, 11, 25, 2006; November 8-9, 11, 13, 15-16, 2006; December 1, 4-7, 14, 22, 2006; and January 4, 2007. Field surveys were conducted by AMEC Biologists John Green, Dave Kajtaniak, Nathan T. Moorhatch, Stephen J. Myers, Chris Rodriguez, and Michael D. Wilcox. Ted Rado, a biological sub-consultant, also assisted in this effort. All flora and fauna detected (e.g., through direct observation, vocalizations, presence of scat, tracks, and/or bones) on the Project site were recorded in field notes and are included as Appendices 1 and 2.

Special status biological resources observed were plotted by using handheld Global Positioning Systems (GPS) equipment and later transferred to a geographic information system (GIS) ESRI ArcView 9.1 format. Unknown species of plants were collected and identified by Andrew C. Sanders, the Herbarium Collection Curator for the University of California at Riverside (UCR).

Plant communities were described in accordance with Robert F. Holland's (1986) descriptions of the terrestrial natural communities of California. Sawyer and Keeler-Wolf (1995) series were also referenced as a plant community classification guide where necessary.

5.2.2 Focused Survey for Rare Plants

Focused surveys for rare plant species potentially occurring on the Project site were conducted throughout various areas of the site concurrently with the general biological resources assessment described above and the desert tortoise survey, described below in Section 5.2.3. Areas of the site that were surveyed for rare plants included much of the power plant site (less a 45-acre area located at the southeast corner of the site that was added to the study area after the rare plant survey was completed), the adjacent construction staging areas and a portion of Segment 1. The remaining areas (i.e., the SE corner of the power plant site, the southern approximate 2/3 of Segment 1, Segment 2, and Segment 3) did not receive surveys for rare plants as these areas became available for study only after the 2006 spring season in which most of these species are detectable. The surveys included focused searches for small-flowered androstephium (*Androstephium breviflorum*), Booth's evening primrose (*Camissonia boothii* ssp. *boothii*), Mojave monkeyflower (*Mimulus mohavensis*), Mojave fishhook cactus (*Sclerocactus polyancistrus*) and short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), as these species have been reported from the general vicinity of the Project site and are associated with vegetation communities or habitat types present on the site. Surveys were conducted during appropriate flowering periods for the annual species; cacti were detectable during all field surveys.

5.2.3 Focused Survey for Desert Tortoise (*Gopherus agassizii*)

A focused survey for the desert tortoise was conducted over 100% of the areas of the Project site proposed for ground disturbance in accordance with approved protocols specified in "Field Survey Protocol for Any Non Federal Action That May Occur within the Range of The Desert Tortoise" (USFWS 1992). The one area of the site not surveyed was the water reclamation pipeline alignment within VVWRA lands, as AMEC was informed on March 29, 2006 by Mr. Dan Gallagher (VVWRA General Manager) and Mr. Chris Anthony (VVWRA Construction Projects Manager) that this area had been cleared of desert tortoises in the past and tortoise-proof exclusion fence was installed along the perimeter of the facility. This fact is also confirmed in the Initial Study/Mitigated Negative Declaration for the *Victor Valley Wastewater Reclamation Authority 18 MGD Regional Wastewater Treatment Facility Expansion Project* (RBF 2005). AMEC biologists, however, later reported that some areas of the VVWRA facility fence did not have tortoise proof fencing installed and gaps under the fence where wildlife could easily pass under were also present in these areas. For this reason, desert tortoises may also occupy areas of the VVWRA fenced facility. VVWRA lands outside the fenced area, and containing suitable habitat, were surveyed. Surveys were conducted on March 30-31, 2006; April 11, 18-19, 25-26, 2006; May 5, 11, 25, 2006; November 8-9, 11, 13, 15-16, 2006; December 1, 4-7, 14, 2006; and January 24-25, 29, 2007 by AMEC Biologists John Green, Dave Kajtaniak, Nathan T. Moorhatch, Stephen J. Myers, Chris Rodriguez, and Michael D. Wilcox. Subconsultant Ted Rado also assisted in this effort.

Belt transects of 30 feet in width were walked throughout the various areas proposed for Project development (i.e., power plant site, the two construction staging areas, all of Segment 1, areas of Segment 2 proposed for disturbance, and all of Segment 3 of the proposed electrical transmission line). All desert tortoise sign (i.e., live tortoises, burrows, scat, carcasses and fragments thereof) was documented on appropriate survey forms (Desert Tortoise Handbook 1992). Observed desert tortoise sign was photographed with digital cameras and mapped using handheld GPS equipment. Desert woodrat (*Neotoma lepida*) middens and animal burrows of various kinds (e.g., desert tortoise, kit fox, coyote, ground squirrel, etc.) were carefully inspected for presence of desert tortoises and/or their sign. ZOI surveys were also conducted in all directions around all areas of the Project site (where possible) at transect intervals of 100', 300', 600', 1,200', and 2,400'.

Table 1. Desert Tortoise (*Gopherus agassizii*) Survey Data

Date	Surveyor(s)	Time	Area/Location	Weather (% clouds)	Wind (mph)	Temp. (°F)
3/30/06	JG, DK, NM, TR, MW	0900-1615	W staging & ZOI, S staging	Clear (0)	0-5	53-70
3/31/06	JG,DK,TR, MW	0900-1500	S staging, W staging ZOI	Cloudy (100)	0-2	51-57
4/11/06	DK,CR,MW	0930-1545	Linears (Segment 1)	Cloudy (100)	3-10	54-63
4/18/06	DK,SM,TR	0800-1600	Power Plant	Clear (0)	2-10	62-70
4/19/06	DK,SM	0800-1600	Power Plant	Clear (0)	0-8	60-77
4/25/06	DK,TR,MW	0900-1530	Power Plant	Clear (0)	0-16	62-79
4/26/06	TR,MW	0830-1545	Power Plant & ZOI, Segment 1 & ZOI	Partly cloudy (25)	0-5	52-65
5/5/06	DK,MW	0900-1600	Segment 1 & ZOI	Clear (0)	0-3	65-85
5/9/06	NM,MW	0900-1600	Segment 1 & ZOI	Clear (0)	0-5	78-93
5/11/06	DK,NM,MW	0815-1445	Power Plant ZOI, W staging ZOI, Segment 1 ZOI	Clear (0)	0-5	75-96
5/25/06	DK,NM	0830-1500	Power Plant ZOI	Clear (0)	0-4	69-95
5/25/06	DK,NM	0830-1500	Power Plant ZOI	Clear (0)	0-4	69-95
11/8/06	NM, SM, TR	0800-1500	Segment 3 & ZOI	Clear (0)	0-5	67-87
11/9/06	JG, NM, TR	0745-1430	Segment 3 & ZOI	Clear (0)	0-20	52-75
11/13/06	JG, DK, TR	0740-1555	Segment 3 & ZOI	Partly cloudy (60)	2-10	56-73
11/14/06	JG, TR	0735-1345	Segment 3 & ZOI	Partly cloudy (10-15)	0-30	52-67
11/15/06	JG, DK, TR	0735-1515	Segment 3 & ZOI	Clear (1-3)	0-8	55-60
11/16/06	JG, DK, TR	0745-1115	Segment 3 & ZOI	Clear (0-1)	0-5	61-69
12/1/06	SM, MW	0930-1630	Segment 1 realignment	Clear (0)	0-3	43-58
12/4/06	NM, SM, MW	0830-1500	Segment 1 realignment & ZOI	Clear (0)	0-3	35-58
12/5/06	SM	8:00-1200	Segment 2	Clear (0)	Wind	37
12/6/06	SM, MW	0830-1600	Segment 2, Segment 1 realignment & ZOI	Clear (0)	Wind	40-63
12/7/06	NM, SM, MW	0820-1545	Segment 1 realignment & ZOI	Clear (0)	0-3	49-67
12/14/06	SM, MW	0830-1545	Segment 1 realignment & ZOI	Partly Cloudy (50)	0-3	46-65
1/24/07	TR, MW	1200-1500	Power Plant added areas & ZOI	Clear (0)	0-5	64
1/25/07	TR, MW	0845-1545	Segment 3 added areas	Clear (0)	0-3	43-60
1/29/07	NM, SM, TR	0900-1430	Power Plant added areas & ZOI	Partly Cloudy (20-45)	0-7	47-60

Surveyor Initials: JG = John Green, DK = Dave Kajtaniak, NM = Nathan Moorhatch, SM = Stephen Myers, TR = Ted Rado, CR = Chris Rodriguez, MW = Michael Wilcox
ZOI = Zone of Influence

5.2.4 Focused Survey for Mohave Ground Squirrel (*Spermophilus mohavensis*)

Surveys for the Mohave ground squirrel (*Spermophilus mohavensis*; MGS) were conducted in accordance with the latest Mohave ground squirrel Survey Guidelines (guidelines), dated January 2003 (CDFG 2003). See Appendix 9 for the *Focused Survey for the Mohave Ground Squirrel for the Victorville 2 Hybrid Power Project* report (MGS report). Focused visual surveys and diurnal trapping surveys conducted over various areas of the Project site by authorized biologists, Stephen J. Myers, Ted Rado, Ryan Young, Stephen J. Montgomery and Christine Halley who each are covered under various Memoranda of Understandings (MOUs) with CDFG. The areas of the Project site surveyed/trapped included the power plant site, the two construction staging areas, and a portion of Segment 1 (see Appendix 9).

Focused visual surveys consisting of walking various areas of the site were conducted on the power plant site, the two construction staging areas, and portions of Segment 1 on 15, 16, and March 17, 2006, preceding the trapping surveys (see Appendix 9). Three trapping grids consisting of 100 traps (10 rows of 10 traps) were utilized for the power plant site. Two linear grids consisting of four rows of 25 traps, with similar trap spacing were utilized for a portion (the northern area) of Segment 1 of the Project's linear corridor. One grid was used for the northwest staging area and one grid for the southeast staging area. 12 inch long Sherman[®] live-traps were used and spaced 35 meters apart. The bait consisted of a mixture of rolled oats, birdseed, and peanut butter. Each grid was trapped for a minimum of five consecutive days. In all, three 5-day trapping surveys were performed, one each during the periods of March 15 through April 30, May 1 through 31, and June 15 through July 15, 2006. The traps were shaded with cardboard shades, and were opened one hour after sunrise and closed one hour before sunset, as required by the trapping guidelines. The air temperature one foot above the ground was closely monitored, and traps were closed when the temperature exceeded 90° F. Traps remained closed until the temperature dropped below 90° F. Air temperature ranges and weather variables were monitored at intervals throughout each day and are presented in the MGS report. Additionally, survey and trapping forms for each grid was completed by the respective biologists daily and are included in the MGS report (see Appendix 9).

A "Plan of Work," outlining the proposed MGS trapping protocol for this Project, as well as other biological field work, was submitted to Ms. Tonya Moore, CDFG Environmental Scientist, in early March 2006. A copy of the Plan of Work is included in the attached MGS report (see Appendix 9). Ms. Moore, in an email to Stephen J. Myers dated May 8, 2006, approved the Plan of Work proposed.

Trapping grids, and the dates they were operated, were located on the Project areas as follows:

- Grid # 1 (Northwestern Portion of Power Plant Site): March 20-24, May 1-5, and July 10-14.
- Grid # 2 (Northeastern Portion of Power Plant Site): March 27-31, May 23-27, July 5-9.
- Grid # 3 (Central Portion of Power Plant Site): April 12-16, May 22-26, July 6-10.

- Grid # 4 (Western Staging Area): March 24-28, May 8-12, June 22-26.
- Grid # 5 (Southern Staging Area): March 31 – April 4, May 1-5 , June 15-19.
- Grid # 6 (portion of Segment 1 Water and Transmission Lines): April 24-28, May 14-18, June 25-29.
- Grid # 7 (portion of Segment 1 Transmission Line): April 10-14, May 15-19, July 10-14.

5.2.5 Focused Survey for Burrowing Owl (*Athene cunicularia*)

Focused surveys for the burrowing owl were conducted throughout areas of suitable habitat within the power plant site, the two construction staging areas, and a portion of Segment 1 of the Project's linear corridor on July 24, 26 2006, and August 2-4, 14-16, 21-22, 25, 28-29, 2006 by AMEC Biologists Dave Kajtaniak, Stephen J. Myers, and Michael D. Wilcox. The recently added areas of Segment 1, as well as Segments 2 & 3 were not surveyed as these areas were not identified as part of this Project until a much later date, after the end of the burrowing owl breeding season. Map 3 in Appendix 1 illustrates the burrowing owl survey areas and locations of all potentially suitable burrows. These areas were surveyed both in the late afternoon (within the recommended time period of two hours before sunset to one hour after sunset) and during the morning (within the recommended time period of one hour before sunrise to two hours after sunrise), in accordance with protocol established by the CDFG *Staff Report on Burrowing Owl Mitigation* (1995). The survey was conducted using transects spaced no more than 100 feet apart over areas that could potentially support burrowing owls. Binoculars were used to scan fences, posts, and other structures that might be used as perches by burrowing owls. Burrows were examined for sign of burrowing owls (i.e. feathers, whitewash, and/or pellets). Table 2 presents pertinent data of each survey (i.e., date, surveyor(s), survey duration, and weather variables). Several surveys were invalidated and required repeat (make-up) surveys due to excessive wind speeds (see Table 2 below).

Table 2. Burrowing Owl (*Athene cunicularia*) Survey Data

Date	Surveyor(s)	Time	Cloud Cover (%)	Wind Speed (mph)	Temp. (° F)
AREA A					
26 July 06	SM	1700-2010	Partly cloudy (60-80)	5-12	93-103
2 Aug 06	SM	1730-2030	Clear (0)	2-5	59-76
4 Aug 06	SM	0530-0830	Clear (0)	2-8	65-76
15 Aug 06	SM	1700-2000	Clear (0)	8-20 (survey invalidated due to high winds)	80-89
16 Aug 06 (make-up from 15 Aug 06)	SM	1720-20-10	Clear (0)	5-12	81-88
AREA B					
24 July 06	MW	1715-2000	Partly cloudy (75)	5-10	95-100
2 Aug 06	MW	1630-1930	Clear (0)	5-10	81-93
14 Aug 06	MW	1700-1930	Clear (0)	10-17 (survey invalidated due to high winds)	84
21 Aug 06 (make-up from 14 Aug 06)	MW	0645-0845	Clear (0)	0-6	61-73
29 Aug 06	DK	0645-0815	Partly cloudy (15)	0-2	72-80
AREA C					
10 Aug 06	MW	1730-2000	Clear (0)	5-15 (survey invalidated due to high winds)	82-86
16 Aug 06 (make-up from 10 Aug 06)	MW	0615-0830	Clear (0)	0-4	60
22 Aug 06	DK	0630-0815	Clear (0)	0-2	71-81
25 Aug 06	MW	0630-0900	Clear (0)	0-3	69-85
28 Aug 06	MW	0630-0830	Clear (0)	0-3	69-80
AREA D					
3 Aug 06	SM	0530-0830	Clear (0)	1-3	38-56
15 Aug 06	SM	0550-0850	Clear (0)	Calm (wind speed not recorded)	67-81
16 Aug 06	SM	0545-0845	Clear (0)	0-2	69-80
22 Aug 06	SM	0545-0845	Clear (0)	0-4	70-82

Surveyor Initials: DK = Dave Kajtaniak, SM = Stephen Myers, MW = Michael Wilcox

5.2.6 Preliminary Determination of Jurisdictional Waters

This section describes the preliminary determinations of the jurisdictional limits of WUS as defined by Section 404 of the Clean Water Act (33 U.S.C §1344) that are subject to USACE jurisdiction and WSC as defined by Section 1602 of the California Fish and Game Code that are subject to CDFG jurisdiction. The full delineation report is provided as Appendix 10 to this report.

Jurisdictional determinations were made using methods approved by the USACE and CDFG including identification of Ordinary High Water Mark (OHWM) indicators and presence of bed and bank features, respectively.

The field assessments for Segment 1 were conducted by AMEC biologists Daryl Trumbo and Dave Kajtaniak on December 12 and 13, 2006. The field assessments for Segment 2 and Segment 3 were conducted by AMEC biologists Nick Ricono and Michael Wilcox on January 29 and 30, 2007. The watercourses within the area were assessed on the characteristic physical and biological features associated with desert washes and other dryland fluvial systems. Ephemeral washes were visually identified within 100 feet of the proposed utility line corridor.

Delineations of WUS and WSC within Segment 1 were conducted by walking the streambeds within approximately 100 feet of the proposed utility line corridor and measuring the widths of the jurisdictional limits with the aid of a field measuring tape at approximately 30-foot intervals, based on the geo-morphological configuration of the channel. GPS points were taken with hand-held units at some of the intervals to verify corresponding site linear locations on the map. The jurisdictional width values were then summed for these watercourses and average widths calculated.

Delineation of waterways within Segment 2 and Segment 3 were conducted by walking the streambeds within approximately 100 feet of the proposed utility line corridors. Jurisdictional boundaries were delineated using a Trimble Geo XR Global Positioning System (GPS). The GPS receiver and data collector were operated following manufacturer's recommendations for obtaining sub-meter accuracy. Post-processing of the data was carried out using Pathfinder Office software and electronic Geographic Information Systems (GIS) shape files were created. GIS data was geo-referenced to aerial photography to produce figures with visible boundary lines of jurisdictional waters. The average widths of jurisdictional waters were calculated using GIS shape files.

6.0 RESULTS

6.1 Literature Review

The literature review consisted of an analysis of the CNDDDB, CNPS Inventory, other biological reports, and consultation with other biologists having experience in the vicinity of the Project Site. This review identified 49 special status biological resources known to occur in the vicinity (within approximately 10 miles) of the Project site (see Appendix 1, Map 4). These resources

include: 10 plants, two invertebrates, two amphibians, four reptiles, 28 birds, and three mammals. Tables 4 through 9 provide a complete list of these sensitive biological resources and their respective conservation status and occurrence potential in the Project vicinity.

6.2 Soils

The *Soil Survey of San Bernardino County, California, Mojave River Area, California* (U.S.D.A. Soil Conservation Service 1986) and the United States Department of Agriculture Natural Resources Conservation Service online Soil Data Mart (<http://soildatamart.nrcs.usda.gov/Download.aspx?Survey=CA671&UseState=CA>) were referenced to determine the soil types occurring throughout the Project site (see Appendix 1, Map 5). The following mapping units occur across the areas of the site:

- Bryman loamy fine sand, 0 to 2% slopes
- Bryman loamy fine sand, 2 to 5% slopes
- Bryman loamy fine sand, 5 to 9% slopes
- Bryman loamy fine sand, 9 to 15% slopes
- Cajon sand, 2 to 9% slopes
- Cajon sand, 9 to 15% slopes
- Haplargids-calciorthids complex, 15 to 50% slopes
- Helendale loamy sand, 0 to 2% slopes
- Kimberlina loamy fine sand, cool, 2 to 5% slopes
- Lavic loamy fine sand

The Bryman series consists of very deep, well drained, fine-loamy soils located on terraces and ancient alluvial fans. These soils formed in alluvium primarily derived from granitic parent material. Slopes are broad, smooth, convex and nearly level to gently sloping or undulating. Most areas are separated by shallow to moderately deep intermittent drainages. The surface of Bryman series has been reworked by the wind. Included in this unit are small areas of Cajon sand, Helendale loamy sand, Mojave Variant loamy sand and areas having pebbles and cobbles on the surface (U.S.D.A. Soil Conservation Service 1986).

The Cajon series consists of very deep, somewhat excessively drained soils located on alluvial fans and river terraces. These soils formed in alluvium are primarily derived from granitic parent material. Slopes are short to long, smooth to convex, and gently sloping to strongly sloping. Most areas are divided by long, shallow, intermittent drainages. Included in this unit are small areas of Helendale loamy sand, Kimberlina loamy fine sand and areas having pebbles on the surface (U.S.D.A. Soil Conservation Service 1986).

The Haplargids-Calciorthids complex is located on terrace escarpments, dissected hills, and terrace remnants that lie primarily between flood plains of the Mojave River and higher terraces. Most areas are separated by shallow to moderately deep intermittent drainages. Included in this mapped unit are small areas of Badland; Cajon soils, Bryman soils and Mohave Variant loamy sand (U.S.D.A. Soil Conservation Service 1986).

The Helendale loamy sand consists of very deep, well drained soils located on alluvial fans and terraces. These soils are formed in alluvium derived predominantly from granitic parent material. Slopes are broad, smooth, slightly convex and almost level. Many areas are dissected by shallow intermittent drainages. Included within this unit are small areas of Bryman loamy fine sand, Kimberlina loamy fine sand, Cajon sand, small areas that have pebbles in the surface and small areas that have slopes up to 3 percent (U.S.D.A. Soil Conservation Service 1986).

The Kimberlina series consist of very deep, well drained soils located in alluvial fans. These soils were formed in alluvium and derived from mixed sources. Texture is course-loamy. Slopes range from 0 to 9 percent (U.S.D.A. Soil Conservation Service 1986).

The Lavic series consist of very deep, moderately well drained soils which are typically located on alluvial fans and rims of basins. Derived predominantly from granitic parent material, Lavic soils were formed in alluvium. Texture is coarse-loamy. Slopes range from 0 to 5 percent (U.S.D.A. Soil Conservation Service 1986).

All of these soil classifications are suitable for the occurrence of a variety of special-status plant and animal species known from the area including, but not limited to, the desert tortoise, Mohave ground squirrel, and burrowing owl.

6.3 Vegetation

The results of the general biological field assessment indicate that five plant communities occur throughout the various areas of the Project site. These include Mojave creosote bush scrub, desert saltbush scrub, non-native grassland, Mojavean juniper woodland and scrub, rabbitbrush scrub. Also present and mapped within various areas of the site are disturbed/developed lands. Six additional plant communities occur in proximity to the east of the power plant site and portions of Segment 1, along the Mojave River. These include Mojave riparian forest, open cottonwood-willow woodland, southern willow scrub, Mojave wash scrub, and open sandy riverbed. Map 6 in Appendix 1 illustrates the vegetation communities on the Project site, within a one-mile radius of the power plant site and within a 1000-foot radius of the Project's linear features. These communities are summarized separately below.

During the course of the general biological assessment, 116 plant species, including Joshua trees and three species of cacti, were recorded on the Project. Joshua trees and native cacti are managed as special status plants by the Native Plant Protection Act and regulated by the Cities of Victorville and Hesperia. See Sections 7.3 and 8.1 for impact and mitigation discussions. This number does not reflect the total number of plant species likely to occur on the site as some annual species were undetectable due to the season that the surveys were undertaken and the amount and timing of the rainfall received in 2006. A more comprehensive species list would require a more intensive botanical survey effort covering more than one season and ideally, multiple years. Appendix 4 includes the scientific and common names for all plant species detected on the site.

The spring of 2006, when the general biological assessment field work and focused surveys for the potentially-occurring rare plant species were conducted, seemed to exhibit poor germination

and growth of flowering annual plant species (annuals). Biologists conducting the field work noted the general lack of annuals at that time of the surveys. This paucity of annuals is likely a result of the amount and timing of the rainfall that occurred during the 2005-2006 winter season. Mean rainfall totals for the winter season (i.e., December, January, and February) in Victorville from 1948 through 2005 equal 2.77 in. A total of 1.59 in., slightly more than half (57%) of that average, was recorded during the 2005-2006 winter season. The bulk of the 2006 rainfall, 2.54 in., occurred later, during the spring season (March, April, and May). This late receipt of rainfall may have resulted in a delayed and/or abbreviated blooming period for many of the annuals in this area.

6.3.1 Mojave Creosote Bush Scrub

Mojave creosote bush scrub, as described by Holland (1986), is one of the most common plant communities on the southwestern region of the United States. Sawyer and Keeler-wolf (1995) refer to this community as creosote bush-white bursage series. It is the dominant community throughout much of the California deserts eastward to northwestern Arizona and southern Nevada (Tierra Madre Consultants 1992). This plant community is generally comprised of widely-spaced shrubs of 0.5-3 meter (1.6-9.8 feet) height. Plant growth generally occurs during late winter and early spring months, when annual precipitation is sufficient. A large variety of annual herbaceous plants blooms following such rainfall (Holland 1986).

Dominant plant species present throughout this community within the Project areas primarily include white bursage (*Ambrosia dumosa*), creosote bush (*Larrea tridentata*), and cheesebush (*Hymenoclea salsola*). Less common species recorded include, but are limited to Nevada joint fir (*Ephedra nevadensis*), winter fat (*Krascheninnikovia lanata*), freckled milkvetch (*Astragalus lentiginosus* var. *fremontii*), Joshua tree (*Yucca brevifolia*), sandpaper plant (*Petalonyx thurberi*), and pencil cholla.

Mojave creosote bush scrub is the dominant vegetation community for most areas of the Project site (see Appendix 1, Map 6). Mojave creosote bush scrub encompasses approximately 285 acres of the power plant site, a collective 50 acres of the proposed footprints of the two construction staging areas, and 50 acres of the disturbance footprint of the linear features.

6.3.2 Desert Saltbush Scrub

Desert saltbush scrub (Holland 1986) is characterized by low-growing, grayish, microphyllous shrubs and the presence of some succulent species. Sawyer and Keeler-wolf (1995) refer to this community as the mixed saltbush series. Although the percent cover is typically low, with much bare ground exposed between the widely spaced shrubs, densely vegetated areas are also present. Although a variety of saltbush (*Atriplex* spp.) species can be present, this vegetation community is often dominated by a single saltbush species (Holland 1986). The dominant plant species present within most of these areas onsite included allscale (*Atriplex polycarpa*). Other species recorded include four-winged saltbush (*Atriplex canescens*), shadscale (*Atriplex confertifolia*), and spine scale (*Atriplex spinifera*).

Although this community does not occur extensively anywhere on the site, 0.3 acres of desert saltbush scrub are present along portions of the proposed footprint of the electrical transmission

line corridor within the southern-most areas of Segment 1 (see Appendix 1, Map 6). This community is also present outside the Project area within the one-mile radius from the power plant and staging areas and outside the Segment 1 linear corridor within the 1,000-foot buffer area.

6.3.3 Non-native Grassland

Non-native grassland (Holland 1986) is characterized by a dense to sparse cover of annual grasses and forbs. Sawyer and Keeler-wolf (1995) refer to this community as the California annual grassland series. Although primarily dominated by exotic species, native annual species are often also present within this community, especially during years of ample rainfall.

Non-native grassland is present in one, 3-acre area of the power plant site. This area has been cleared of the pre-existing natural vegetation community, likely Mojave creosote bush scrub, and colonized by exotic annual species (see Appendix 1, Map 6). Vegetative cover of this area varies from being nearly devoid of vegetation to areas exhibiting a sparse overstory vegetation cover (e.g., remnant creosote bush and white bursage) and a dense understory of exotic annual species (e.g., checkered fiddleneck [*Amsinckia tessellate*], and various mustard [*Brassica* spp.] species). Non-native grassland encompasses approximately 3 acres of the footprint of the power plant site (see Appendix 1, Map 6).

6.3.4 Disturbed/Developed Lands

Disturbed/developed lands are generally characterized as those areas that are either devoid of vegetation as a result of site grading, or developed or occupied with structures and/or landscaped with non-native ornamental plants or shade trees. In general, these areas are so heavily disturbed that native and non-native vegetation can not become established. Examples of disturbed/developed areas include paved and unsurfaced roads, graded or cleared areas, driveways, parking areas, houses, cement foundations, and existing structures.

Disturbed areas/developed lands are present throughout various areas of the site (see Appendix 1, Map 6). These areas include unsurfaced and paved roads, as well as developed areas supporting structures, and recently graded areas (e.g., areas of the VWWTP facility). Vegetative cover of these areas varies from being entirely void of vegetation to having moderate ornamental landscaping. Garbage dumping is evident in some of these areas and storage of various forms of property (e.g., vehicles, scrap wood, appliances, furniture) occurs on others. Approximately 50 acres of disturbed/developed areas occur on the power plant site, and 3.6 acres along Segment 1.

6.3.5 Mojave Riparian Forest

Mojave riparian forest (Holland 1986) is characterized by a relatively open forest community that occurs along the larger rivers and streams in the Mojave Desert. Sawyer and Keeler-wolf (1995) refer to this community as the Fremont cottonwood series. Unlike forest communities exhibiting a more closed canopy, a dense, shrubby understory is able to become established in this community, which adds to both its species diversity and structural composition (Tierra Madre Consultants 1992). The trees within this community are generally less than 25 m (82 ft.)

in height and consist of Fremont cottonwood (*Populus fremontii*), which is the dominant species, Goodding's black willow (*Salix gooddingii*), red willow (*Salix laevigata*), California sycamore (*Plantanus racemosa*), Arizona ash (*Fraxinus valutina*), and white alder (*Alnus rhombifolia*). Shrubs and variable surface vegetation provide a ground cover ranging from continuous to infrequent and consist of California rose (*Rosa californica*), cocklebur (*Xanthium strumarium*), mulefat (*Baccharis salicifolia*) and cattail (*Typha latifolia*) in the wetter areas. Some areas within this plant community are dominated by relatively homogenous stands of Fremont cottonwood. These areas often exhibit very little understory.

Although not present on the Project site, a Mojave riparian forest plant community occurs to the east of the site within the Mojave River. Along one area of the site, where the reclaimed water line is located along the eastern fence line of the VVWRA facility, this plant community is located immediately adjacent (within approximately 50 feet) of the proposed route of the reclaimed water pipeline.

6.3.6 "Open Cottonwood-willow Woodland"

Open cottonwood-willow woodland is characterized by mature stands of Fremont cottonwood and willow species located in the drier areas, outside but often adjacent to the Mojave riparian forest community. As the name suggests, this community is much more open than Mojave riparian forest, and exhibits relatively little understory and contains lower species diversity. Larger willow species may also be present, however in relatively low densities (Tierra Madre Consultants 1992).

A small area of open cottonwood-willow woodland is not present on any area of the Project site. This community is, however, present within the Mojave River, which is adjacent to areas of Segment 1 and within the one-mile radius of the power plant site and the 1000-foot radius of the linear features. One small area of this community also occurs at one location, outside of the Mojave River, adjacent to the portion of Segment 1 near where the transmission line crosses from the west to the east side of Shay Road (see Appendix 1, Map 6).

6.3.7 Southern Willow Scrub

Southern willow scrub (Holland 1986) is characterized by shrubby willow species (primarily *Salix exigua* with less common occurrences of *Salix lasiolepis* and *Salix gooddingii*) that form dense, low-growing thickets. This community is typically present along watercourses, in close proximity to surface water, where regular flooding occurs; it otherwise would succeed to riparian forest communities, most likely Mojave riparian forest within the vicinity of the site (Tierra Madre Consultants 1992). Along the outer edge of this community, away from areas of surface water, Fremont cottonwoods also occur (Tierra Madre Consultants 1992).

Although not present on the Project site, southern willow scrub occurs to the east of the site within the Mojave River. Along one area of the site, where the reclaimed water line is located along the eastern fence line of the VVWRA facility, this plant community is located immediately adjacent (within approximately 60 feet of the water line route).

6.3.8 Mojave Wash Scrub

Mojave wash scrub (Holland 1986) is characterized by a low-growing, shrubby, sparsely vegetated plant community exhibiting scattered to locally dense overstory of microphyllous trees. This vegetation community typically occurs in the sandy bottoms of wide canyons, incised arroyos of upper bajadas, and within braided, shallow washes of the lower bajadas, usually below 5,000 feet.

Although Mojave wash scrub is generally absent from the site, offsite areas of the washes that bisect some of the Project's proposed transmission line within Segment 1 contain Mojave wash scrub. Additionally, elements of Mojave wash scrub, if not clear-cut examples of this community, also occur intermittently along portions of the Mojave River in the vicinity of the site (see Appendix 1, Map 6).

6.3.9 Mojavean Juniper Woodland and Scrub

Mojavean juniper woodland and scrub (Holland 1986) is a low, open woodland community that is dominated by California juniper. This community is restricted to the southern Sierra Nevada, the Tehachapi Mountains, and the desert slopes of the Transverse and Peninsular ranges. Other species present within this community include Joshua tree, rubber rabbitbrush, and Nevada joint-fir.

Areas of Segment 3, particularly in its southern half most closely resemble Mojavean juniper woodland and scrub (see Appendix 1, Map 6). Approximately 23 acres of this community are present within the proposed footprint of this portion of the Project site.

6.3.10 Rabbitbrush Scrub

This disturbance-maintained community is dominated by rubber rabbitbrush. This community is widespread and quite common in some areas of the Victor Valley region.

Areas of Segment 3 exhibit nearly monotypic stands of rabbitbrush scrub (see Appendix 1, Map 6). These generally occur in areas that have received historic site disturbance (i.e., adjacent to road crossings, along the California Aqueduct). Although areas of rabbitbrush scrub are present along the southern areas of Segment 3, this community is not expected to be impacted by implementation of the Project.

6.3.11 Sandy Riverbed

Neither Holland (1986) or Sawyer and Keeler-Wolf (1995) provide a separate designation for this plant "community"; however these areas do not neatly fit into any of the defined vegetation communities provided by these references. These areas are distinct from the Mojave riparian forest plant community, as they either lack trees and shrubs entirely or have widely scattered individual trees or shrubs, being sparsely vegetated with annuals and/or early stage successional saplings from riparian trees and vegetation. Subsurface flows occur within these areas. Intermittently within these areas may also be elements, if not clear cut examples, of Mojave Wash Scrub. Representative plant species occurring within this area include

Scalebroom (*Lepidospartum squamatum*), rubber rabbitbrush, and Yerba Santa (*Eriodyction trichocalyx*).

Although not present on the Project site, areas of open, sparsely-vegetated, sandy riverbed are present within the floodplain of the Mojave River within the one-mile radius of the Project (see Appendix 1, Map 6).

6.3.12 Preliminary Determination of Jurisdictional Waters

A total of 55 jurisdictional waters were documented within the three proposed electrical transmission line corridors during the preliminary determination of the jurisdictional status of WUS and WSC on the VV2 Project site. These jurisdictional waters are described in Table 3 and are shown in Appendix 1, Map 7. Forty jurisdictional waters were identified along Segment 1, ten along Segment 2, and five along Segment 3. No jurisdictional waters were observed within the 338 acre boundary of the proposed power plant facility or within the combined 50 acre boundary of the proposed construction staging areas. All jurisdictional waters found in the Project area are part of dryland fluvial systems that lack wetlands as defined by the USACE and riparian habitat as defined by the CDFG.

A discussion of the preliminary determinations made by AMEC regarding the jurisdictional status of WUS and WSC is provided below. It should be noted that USACE and CDFG maintain the ultimate authority in determining the jurisdictional status of WUS and WSC. Preliminary determinations were made during this investigation using methods approved by the USACE and CDFG, described in Section 5.2.6 of this document, based on hydrogeomorphic characteristics of ephemeral drainages found within 100 feet of the proposed Project, including the visual identification of an OHWM and the identification of bed and bank features.

Waters of the United States

Ephemeral drainages that contained both an observable OHWM and a surface or subsurface connectivity to a federally regulated waterway were considered to be WUS. The majority of ephemeral drainages determined to be WUS had an observable, overland connection with the Mojave River or Oro Grande Wash, both federally regulated WUS. Ephemeral Drainage #49 and #50 on Segment 2 and #51 and #55 on Segment 3 had been physically altered by adjacent housing developments and direct connection with Oro Grande Wash was difficult to observe in the field. However, due to the proximity of these drainages to the Oro Grande Wash and based on topographic contours from relative USGS maps, all washes identified in Segment 2 and Segment 3 have been determined to show connectivity to a federally regulated water (See Table 3). Overall, 54 of the 55 total jurisdictional waters identified in the Project area were determined to be WUS subject to the jurisdiction of the USACE.

Table 3. Preliminary Jurisdictional Determinations of Ephemeral Drainages Found within 100 Feet of Linear Corridor Segments of the VV2 Power Plant Project

Ephemeral Drainage	Average Width (feet)	Jurisdictional Status	Connectivity to WUS
Segment 1			
1	1.0	WSC	Flows into nearby sewer plant and not to Mojave River.
2	103.7	WSC and WUS	Disturbed wash flows directly to Mojave River.
3	13.0	WSC and WUS	Man-made earthen channel that flows directly to Mojave River.
4	5.8	WSC and WUS	Flows directly to Mojave River
5	19.0	WSC and WUS	Flows directly to Mojave River
6	6.0	WSC and WUS	Flows directly to Mojave River
7	5.0	WSC and WUS	Flows directly to Mojave River
8	3.3	WSC and WUS	Flows directly to Mojave River
9	7.3	WSC and WUS	Flows directly to Mojave River
10	25.7	WSC and WUS	Flows directly to Mojave River
11	8.5	WSC and WUS	Flows directly to Mojave River
12	1.2	WSC and WUS	Flows directly to Mojave River
13	3.7	WSC and WUS	Flows directly to Mojave River
14	34.8	WSC and WUS	Flows directly to Mojave River
15	4.0	WSC and WUS	Flows directly to Mojave River
16	1.2	WSC and WUS	Flows directly to Mojave River
17	2.4	WSC and WUS	Flows directly to Mojave River
18	1.7	WSC and WUS	Flows directly to Mojave River
19	1.3	WSC and WUS	Flows directly to Mojave River
20	1.0	WSC and WUS	Flows directly to Mojave River
21	1.1	WSC and WUS	Flows directly to Mojave River
22	18.5	WSC and WUS	Flows directly to Mojave River
23	4.1	WSC and WUS	Flows directly to Mojave River
24	4.9	WSC and WUS	Flows directly to Mojave River
25	7.6	WSC and WUS	Flows directly to Mojave River
26	1.5	WSC and WUS	Flows directly to Mojave River
27	2.8	WSC and WUS	Flows directly to Mojave River
28	13.2	WSC and WUS	Flows directly to Mojave River

Table 3. Preliminary Jurisdictional Determinations of Ephemeral Drainages Found within 100 Feet of Linear Corridor Segments of the VV2 Power Plant Project

Ephemeral Drainage	Average Width (feet)	Jurisdictional Status	Connectivity to WUS
29	0	WSC and WUS	Wash flows directly to Mojave River through culvert under the road within the Project area and will not be impacted by the Project. Its width was not calculated.
30	7.7	WSC and WUS	Flows directly to Mojave River
31	3.9	WSC and WUS	Flows directly to Mojave River
32	3.0	WSC and WUS	Flows into larger drainage that flows directly to Mojave River.
33	4.2	WSC and WUS	Flows directly to Mojave River
34	2.2	WSC and WUS	Man-made earthen channel that flows directly to Mojave River
35	2.8	WSC and WUS	Flows directly to Mojave River
36	11.0	WSC and WUS	Flows directly to Mojave River
37	4.4	WSC and WUS	Flows directly to Mojave River
38	1.0	WSC and WUS	Flows directly to Mojave River
39	2.0	WSC and WUS	Flows directly to Mojave River
40	1.4	WSC and WUS	Flows directly to Mojave River
Segment 2			
41	8.0	WSC and WUS	Channel follows paved road directly to Oro Grande Wash
42	6.7	WSC and WUS	Flows directly to Oro Grande Wash
43	8.1	WSC and WUS	Channel follows roadbed directly to Oro Grande Wash
44	5.0	WSC and WUS	Flows directly to Oro Grande Wash
45	33.6	WSC and WUS	Oro Grande Wash located adjacent to corridor
46	7.2	WSC and WUS	Wash adjacent to corridor, flows directly to Oro Grande Wash
47	7.7	WSC and WUS	Flows directly to Oro Grande Wash
48	43.0	WSC and WUS	Wash routed through a development, flows directly to Oro Grande Wash
49	8.1	WSC and WUS	Wash routed through a development, flows indirectly to Oro Grande Wash
50	5.6	WSC and WUS	Wash routed through a development, flows indirectly to Oro Grande Wash
Segment 3			
51	17.3	WSC and WUS	Wash routed through a development, flows indirectly to Oro Grande Wash
52	7.4	WSC and WUS	Flows directly to Oro Grande Wash

Table 3. Preliminary Jurisdictional Determinations of Ephemeral Drainages Found within 100 Feet of Linear Corridor Segments of the VV2 Power Plant Project

Ephemeral Drainage	Average Width (feet)	Jurisdictional Status	Connectivity to WUS
53	11.4	WSC and WUS	Flows directly to Oro Grande Wash
54	15.0	WSC and WUS	Oro Grande Wash
55	12.2	WSC and WUS	Wash routed through a development, flows indirectly to Oro Grande Wash

WSC – Water of the State of California. Jurisdictional to California Department of Fish and Game under Section 1602 of the California Fish and Game Code.

WUS – Water of the United States. Jurisdictional to U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.

Ephemeral Drainage #29 on Segment 1 was observed flowing through a culvert for the entire length of the 100 foot Project corridor. Although still a WUS, the drainage width was not calculated because it was determined that direct impact to the drainage was not possible.

Waters of the State of California

All of the 55 drainages identified within the three proposed electrical transmission line corridors were determined to be WSC subject to the jurisdiction of the CDFG (Table 3). Of these, 54 drainages were also determined to be WUS (see section above). Ephemeral Drainage #1, found along Segment 1, was observed flowing into the VVWRA treatment facility between the proposed Segment 1 corridor and the Mojave River (see Appendix 1, Map 7). No outlet was observed and it was, therefore, determined that Ephemeral Drainage #1 was not connected to the Mojave River and thus is not a WUS but is solely a WSC.

6.4 Wildlife

The general biological assessment surveys detected a total of 131 vertebrate species on the Project site. These included 14 reptile species, 104 bird species, and 13 mammal species. Appendix 5 includes the scientific and common names for these species. It should be noted, however, that relatively short-term inventories of this nature are limited in their scope by the seasonality, timing and duration of surveys, as well as by the nocturnal and fossorial habits of many desert-dwelling animals. Therefore, the list of vertebrate species in Appendix 5 does not necessarily reflect the total number of animals that potentially occupy the site.

6.4.1 Reptiles

A total of 14 reptile species were observed during the surveys. Appendix 5 provides a complete list of reptiles detected on the Project site during the surveys. Representative species included side-blotched lizard, Great Basin whiptail, Great Basin gopher snake, and Mojave rattlesnake. One sensitive species, the desert tortoise was also observed throughout various areas of the Project sites. This species is discussed in detail in Section 6.6.3 below. Table 6 provides a

summary of the sensitive reptiles that have been reported from, or have the potential to occur in the vicinity of the Project site based on suitable habitat and the species' geographic range.

6.4.2 Birds

A total of 103 bird species were detected during the surveys. A complete list of the bird species observed is included in Appendix 5. These included a mix of resident and migratory species. Representative bird species observed included: Costa's hummingbird (*Calypte costae*), Common raven, red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), Say's phoebe (*Sayornis saya*), western meadowlark (*Sturnella neglecta*), lesser nighthawk (*Chordeiles acutipennis*), barn swallow (*Hirundo rustica*), northern mockingbird (*Mimus polyglottos*), and house finch (*Carpodacus mexicanus*). Sensitive bird species detected onsite or observed adjacent to the site (e.g., flying by) included, but were not limited to: bald eagle (*Haliaeetus leucocephalus*), Swainson's hawk (*Buteo swainsoni*), burrowing owl, Le Conte's thrasher and loggerhead shrike. All of the sensitive bird species observed, that have been reported from the vicinity, or are considered to have potential to occur on the site are discussed in detail in Section 6.6.4 and Table 7.

6.4.3 Mammals

A total of 13 mammal species were detected during the surveys. Representative species included white-tailed antelope squirrel, desert cottontail (*Sylvilagus audubonii*), Panamint kangaroo rat (*Dipodomys panamintinus*), southern grasshopper mouse (*Onychomys torridus ramona*), kit fox, and coyote. Of these, only the Southern Grasshopper Mouse is considered to be a sensitive species. This species is recognized as a California Species of Special Concern (CSC) by the CDFG. This species is discussed in detail in Section 6.6.5 and Table 8. Other common mammals (e.g., Virginia opossum [*Didelphis virginiana*], bobcat [*Felis rufus*], raccoon [*Procyon lotor*], striped skunk [*Mephitis mephitis*], etc.) are expected to occur on and adjacent to the site, however were not observed during the surveys due to survey timing, seasonality, and/or the nocturnal activity of many mammal species. A complete list of the mammal species observed is included in Appendix 5.

6.4.4 Wildlife Movement Corridors

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Corridor areas are also where plants can propagate and genetic interchange can occur. Populations can move through corridors in response to both environmental changes and natural disasters. Declining species can also be replenished from other areas (Bond 2003) via corridors. Many species of wildlife are known to routinely move through the landscape during their daily and/or seasonal activities. Many resident species in a given area may travel only short distances within their home ranges or territories on a daily, annual, or even during their entire lifetime. Other species, such as migratory birds, routinely travel great distances seasonally. Some large mammalian predators are known to have large home ranges and travel significant distances to access the biological resources that they need in order to survive. Predation is a key process in sustaining biodiversity, therefore it is important to preserve

corridors or linkages between preserved large, core habitat areas to allow large predators, and other wildlife (and plants) to disperse or travel.

Extensive long-term species ecology, movement patterns, and dispersal behavior would be required to conclusively demonstrate whether a particular site or feature of a site served as an important movement corridor. This type of data is unavailable for most of the species occurring or potentially occurring on the Project site. However, drainages, ridgelines, and other natural and manmade linear features and barriers often serve as areas that wildlife routinely use to access essential natural resources. Such areas (i.e., onsite drainages, ridgelines, small valleys) within the Project site may serve as potential wildlife corridors. Wildlife that would be most likely to routinely use the onsite corridors would be coyote, kit fox, rabbits, bobcat, and migrating/foraging bird species.

In the vicinity of the proposed Project site, the Mojave River is a corridor for movement of wildlife species, migratory birds in particular, between the San Bernardino Mountains to the south and the Mojave Desert and areas further to the north. This was witnessed on several occasions during the field studies conducted for this Project. Observations of Bald Eagle, Swainson's Hawk, Turkey Vulture (*Cathartes aura*), Hermit Warbler (*Dendroica occidentalis*), Wilson's Warbler (*Wilsonia pusilla*), etc. were made either on the Project site or over the Mojave River from the Project site by various biologists conducting the onsite studies. Similarly, areas adjacent to the Mojave River almost certainly serve as movement corridors providing access to the resources associated with the river.

6.5 Fish and Wildlife Species of Commercial or Recreational Value

Species of commercial or recreational value include those species that provide local or regional financial resources to individuals or groups and could include fisheries, small game hunting, etc.

Areas of undeveloped open space lands in the Mojave Desert have the potential to support fish and wildlife species of commercial and/or recreational value to the general public. Examples may include lands used for the legal hunting of, or fishing for, respective game or sport fish species and bird watching or wildlife viewing.

The City of Victorville, in which the Project is primarily located, does not allow hunting within its corporate boundaries. Therefore permanent and temporary loss of habitat within the Project site is not expected to impact legal hunting of game species. Resources for sport fishing activities are not present since the site does not support bodies of water, with the exception of sewage treatment ponds located at the VWWRA facility. Additionally, it is unlikely that the site is used by anyone for bird and/or wildlife watching, with the exception of perhaps the current residents of the site, who may bird watch or view wildlife incidentally for several reasons. The site is private property, some of which is posted "No Trespassing." Additionally, the site does not support any bodies of water (with the exception of a portion of Segment 1 which is adjacent to the VWWRA facility containing sewage ponds), mesic areas or riparian vegetation communities that might be of special interest to bird or wildlife watchers. Bird and/or wildlife watchers would need to acquire permission by the respective property owners, including the VWWRA, to legally access any areas of the site. Furthermore, some areas of the site are

inhabited by people possessing unleashed, free-ranging, sometimes aggressive dogs. More than 20 dogs have been observed roaming the site at a time. Some of these dogs have expressed aggression towards field personnel and are destructive to wildlife habitat.

For the reasons discussed above, mainly lack of suitable habitat and public lands, fish and wildlife species of commercial and recreational value do not occur within the Project site or vicinity.

6.6 Special Status Biological Resources

The literature review identified 49 special status plant and animal species reported to occur in the vicinity of the Project site (See Sections 6.6.1 through 6.6.6 and Tables 4 through 9 below). Plant or animal taxa may be considered "sensitive" or "special status" due to declining populations, vulnerability to habitat change or loss, or because of restricted distributions. Some of these species have been listed as "threatened" or "endangered" by the USFWS and/or the CDFG, and are thus protected by the federal and state Endangered Species Acts respectively. State-listed species and certain other desert-occurring plants are also protected under provisions of the Native Plant Protection Act. Other species have been identified as sensitive or special status by the USFWS and CDFG. Still others have been designated as special status species by private conservation organizations, including the CNPS and Audubon Society. Although some of these species have not been formally listed as "threatened" or "endangered," they can still be considered significant under CEQA. Pursuant to *Title 14. California Code of Regulations*, Chapter 3: Guidelines for Implementation of the California Environmental Quality Act, conservation status (endangered, rare or threatened) is also applied to species that may not be included in any formal federal or state listing, however the species is considered to likely become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal ESA. Local jurisdictions (i.e., Cities of Victorville and Hesperia) also regulate specified biological resources (e.g., Joshua trees, cacti, and other plant species) as locally sensitive.

The general biological assessment and focused field surveys for desert tortoise, Mohave ground squirrel, and burrowing owl resulted in the detection of 18 sensitive biological resources throughout various areas of the Project site (see Appendix 1, Map 8). This included one reptile, the desert tortoise, and 17 bird species having various levels of sensitive species status. In addition, for the purposes of this assessment, the Mohave ground squirrel will be assumed to be present throughout the Project site. A summary of these sensitive biological resources is provided in Section 6.6 and the corresponding Tables 4 through 9. CNDDDB Sensitive Species Field Survey Forms are also appended to this report (see Appendix 7).

Special-status Plants

The only special-status plant species observed on the Project site during the surveys include Joshua tree, silver cholla, pencil cholla, and beavertail cactus. These species are not listed as endangered or threatened by any of the regulatory agencies, however are regulated by the Native Plant Protection Act and the Cities of Victorville and Hesperia. Ten additional special status plant species have been reported from the vicinity of the site based on the literature

review conducted. These include small-flowered androstephium (*Androstephium breviflorum*), Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*), Plummer's mariposa lily (*Calochortus plummerae*), Booth's evening primrose (*Camissonia boothii* ssp. *boothii*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), Mojave monkeyflower (*Mimulus mohavensis*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), Mojave fishhook cactus (*Sclerocactus polyancistrus*), southern skullcap (*Scutellaria bolanderi* ssp. *austromontana*), and San Bernardino aster (*Symphyotrichum defoliatum*). Of these, small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower are considered to have some potential to occur on the site. These species and their potential to occur within the Project site are summarized below.

Joshua Trees and Cacti

Joshua trees and three species of native cacti (i.e., silver cholla, pencil cholla, and beavertail cactus) are not listed as threatened or endangered, or managed as special status species, by either the USFWS or CDFG. This perennial species belonging to the Liliaceae (Lilly family [Joshua tree]) and Cactaceae (Cactus family) respectively are, however, regulated by the Native Plant Protection Act and protected by the municipal codes of the Cities of Victorville and Hesperia.

Joshua trees, silver cholla, pencil cholla, and beavertail cactus were observed throughout the various areas of the Project site. Surveying and mapping of these species will be completed prior to the start of Project construction.

Small-flowered Androstephium

Small-flowered androstephium occurs within Mojave Desert scrub vegetation communities, particularly within desert dunes systems and sand fields at elevations between approximately 220 and 640 m (~720–2,100 ft.). This herbaceous perennial belonging to the Liliaceae (Lily family) is reduced to an underground bulb during the non-blooming period. Small-flowered androstephium is not federally or state listed as threatened or endangered, but designated as a List 2.3 species by the CNPS which means that it is rare, threatened or endangered in California however more common elsewhere and that it is not considered very endangered in California (<20% of occurrences threatened or no current threats known). The CNPS also gives this species a state rank of S1.3 and a global rank of G5 meaning that there are less than 6 known Occurrences or less than 1,000 individuals OR less than 2,000 acres, however there are no known threats to the species. The global rank of G5 means that the population or stand is demonstrably secure to ineradicable due to being commonly found in the world.

Small-flowered androstephium was not observed on the Project site during the focused surveys. This species was been reported to occur approximately one mile west of southern terminus of Segment 2 of the electrical transmission line, on the north side of Highway 18 (CNDDDB 2006) (see Appendix 1, Map 4). Sand dunes are not present on the Project site. The very limited sandy areas that are intermittently present are considered to be marginal at best for this species. For these reasons, the occurrence potential for this species is considered to be low.

It should be noted, however that the surveys for rare plants were conducted for 100 percent of the two construction staging areas, but not for 100 percent of the power plant site as areas of the site (approximately 50 acres) were added to the study area after the blooming period for this species. Similarly, only the northern-most portion of Segment 1 of the linear corridor received rare plant surveys, due to changes in the alignment of this Project feature well after the blooming period. In addition, no rare plant surveys were conducted for Segments 2 or 3 as these areas were added to the study area after the blooming period was over. For these reasons, and due to: 1) the presence of suitable habitat throughout the Project site; 2) the proximity of the site to known occurrences of this species; and 3) the (reduced) amount and (late) timing of rainfall that was received in 2006 which may have resulted in a poor germination year for annual flowering plant species in the area, this species may have been undetectable at the time of the focused surveys.

Palmer's Mariposa Lily

Palmer's mariposa lily is associated with meadows, seeps, and vernal moist areas in chaparral and lower montane coniferous forest at elevations between approximately 1000 and 2390 m (~3,280–7,841 ft.) (CNDDDB 2006, CNPS 2006). This California endemic perennial belonging to the Liliaceae (Lily family) is reduced to an underground bulb during the non-blooming period. Palmer's mariposa lily is not federally or state listed as threatened or endangered, however designated as a List 1B.2 species by the CNPS which means that it is rare, threatened or endangered in California, and considered fairly endangered in California (<20% of occurrences threatened or no current threats known). The CNPS also gives this species a state rank of S2.1 meaning that there are 6-20 occurrences or 1,000-3,000 individuals or 2,000-10,000 acres in the state. A global rank of G2T2 has also been assigned to this species which essentially means that the same definition applied to the state rank above also applies to both the species as a whole and the subspecies at the global level.

Palmer's mariposa lily has been reported from Horsethief Canyon, which is approximately 3.5 miles south of the southern terminus of Segment 3 of the electrical transmission line (i.e., Lugo Substation). This species is however, associated with vegetation communities and mesic microhabitats that are not present on the Project site. For this reason, Palmer's mariposa lily is considered to be absent from the Project site. Thus, focused surveys were not considered to be warranted and thus not performed for this species.

Plummer's Mariposa Lily

Plummer's mariposa lily occurs in chaparral, cismontane woodland, coastal sage scrub, lower montane coniferous forest, and valley/foothill grassland vegetation communities between 100-1,700 m (328-5,577 ft.) in elevation (CNPS 2006). This species occurs in rock or sandy substrates, usually derived from granitic or alluvial parent material and often sprouts abundantly following fires. Like its relative above, Plummer's mariposa lily also a California endemic bulbiferous herb in the Liliaceae (Lily family). This species is also not federally or state listed as threatened or endangered by either the federal or state regulatory agencies; it is however designated as a List 1B.2 species by the CNPS, indicating a considered status of "rare, threatened, or endangered in California and elsewhere" and "fairly endangered (20-80%

occurrences threatened)” in California. The CNPS also provides a state ranking of S3.2 and the global ranking of G3 for this plant species. Please refer to the Key to Tables on page 118 below for CNPS designation definitions.

Plummer’s mariposa lily is known from Summit Valley, approximately four miles southeast of the southern terminus of Segment 3 of the electrical transmission line (i.e., Lugo Substation). Also similar to its relative above, this species is also associated with vegetation communities that are not present on the Project site. For this reason, Palmer’s mariposa lily is considered to be absent from the Project site thus focused surveys were not considered to be warranted and thus not performed for this species.

Booth’s Evening Primrose

Booth’s evening primrose is associated with sandy soils in Joshua tree woodland and pinyon-juniper woodland vegetation communities between approximately 900 to 2,400 m (~2,950 – 7,870 ft.) in elevation. This annual herbaceous species belonging to the Onagraceae (Evening primrose family) is not listed as threatened or endangered by the USFWS or CDFG; however it is designated as a List 2.3 species by the CNPS which means that the plant is “rare, threatened or endangered in California but more common elsewhere” and that it is “not very endangered in California (<20% of occurrences threatened or no current threats known)”. The CNPS also provides the state ranking of S2.3 and the global ranking of G5T4 for this species. Please refer to the Key to Tables on page 118 below for definitions of these designations.

Booth’s Evening Primrose is reported to occur within the Mojave River near Oro Grande, approximately one mile east-southeast of the Project site (CNDDDB 2005) (see Appendix 1, Map 4). Additionally, Booth’s Evening Primrose was reported to occur in the immediate vicinity of the site during biological field survey work conducted for the Southern California Logistics Airport (SCLA) Specific Plan Amendment and Rail Service Project (Tom Dodson Associates 2003). This species was not observed during the focused surveys. Sandy soils are limited on the Project site and considered to be marginal at best for this species. For these reasons, the occurrence potential for this species is considered to be low. As discussed above, portions of the plant site and linear facilities routes were not studied for rare plants.

Sagebrush Loefflingia

Sagebrush loefflingia is known to occur in desert dunes and sandy areas exhibiting Great Basin scrub and Sonoran desert scrub vegetation communities at elevations between 700 to 1615 meters (2,300-5,300 ft.). This annual herbaceous species belonging to the Caryophyllaceae (Pink or Carnation family) blooms from April through May. Sagebrush loefflingia is not designated as threatened or endangered by either of the state or federal resource agencies. This species has, however, been given a designation of List 2.2 and a State and Global ranking of 2.2 and G5T2T3, respectively. Please refer to the Key to Tables on page 118 below for definitions of these designations.

Sagebrush loefflingia was not observed during the rare plant surveys conducted. There is a single record of this species occurring at one location approximately 1.5 miles west of the northern portion of Segment 3 (see Appendix 1, Map 4). Sand dunes are not present on the

Project site. The limited sandy areas that are intermittently present are considered to be marginal at best for this species. For these reasons, the occurrence potential for this species is considered to be low.

Mojave Monkeyflower

Mojave monkeyflower occurs in Joshua tree woodland and Mojavean desert scrub, particularly in dry sandy and/or gravelly washes and slopes along the Mojave River at elevations between 600-1,200 m (1,969-3,937 ft.). This California endemic annual herbaceous species belonging to the Scrophulariaceae (Figwort family) is not listed as threatened or endangered by the USFWS or CDFG, however it is designated as a List 1B.2 species by the CNPS, which means it is considered by the CNPS to be “rare, threatened, or endangered in California and elsewhere” and “fairly endangered (20-80% occurrences threatened)” in the state. The CNPS also provides the state ranking of S2.2 and the global ranking of G2 for this species. This species is also managed as sensitive by the BLM. The Key to Tables on page 118 below provides the definitions of these codes.

Mojave monkeyflower is known to occur between Helendale, and Oro Grande, on the east side of the Mojave River (see Appendix 1, Map 4). Mojave monkeyflower was not observed during focused survey efforts. However, since not all areas of the site were surveyed and since 2006 was a poor germination year for annual flowering plant species, this species may have been undetectable at the time of the focused surveys. Despite this, AMEC considers there to be a very low potential for this species to occur on the Project site due to the presence of marginally suitable habitat for this species located onsite.

Short-joint Beavertail

Short-joint beavertail is associated with Joshua tree woodland, Mojave desert scrubs, pinyon-juniper woodland, chaparral, and riparian woodlands with sandy soils or granitic loams. This California endemic member of the Cactaceae (Cactus family) and subspecies of the beavertail cactus occurs between 425 to 1800 m (1,395-5,900 ft.). Short-joint Beavertail is not state or federally listed as threatened or endangered. This subspecies is however designated as a CNPS List 1B.2 species and given a state rank of S1.2 and a global rank of G5T1 by the CNPS. The List 1B.2 designation indicates that the CNPS considers this plant to be “rare, threatened, or endangered in California and elsewhere” and that it is “fairly endangered in California.” The state rank means that there is either less than 6 occurrences, or less than 1,000 individuals, or less than 2,000 acres of this species known. The global rank indicates that the full species population or stand is demonstrably secure to ineradicable due to being commonly found in the world and that the variety (*var. brachyclada*) is known from less than 6 viable occurrences, or less than 1,000 individuals, or less than 2,000 acres.

Short-joint beavertail was not observed on the Project site during the focused surveys/general biological assessment. For this reason, although suitable habitat is present within areas of Segment 3, this species is considered to be absent from the Project site. This species has been reported to occur in the vicinity of Segment 3 of the Project transmission line corridor (see Appendix 1, Map 4). Nevertheless, should any individuals of this species be found onsite during

preconstruction surveys and/or during monitoring of construction, they would either be avoided by construction or transplanted (as required by City and County ordinance) along with all of the other cacti.

Mojave Fishhook Cactus

Mojave fishhook cactus is associated with well drained soils in rocky, gravelly mesas, slopes, and outcrops in Mojave desert scrub, Joshua tree woodland, and Great Basin scrub often on limestone soils between 640 to 2,320 m (2,100 to 7,610 ft.). This succulent perennial cactus is not federally or state-listed, however managed as a special status species by the CNPS. The CNPS ranks this species as a List 4.2 species meaning that it has a limited distribution and that it is considered fairly endangered in California and considered a “watch list” species. The CNPS also gives this species a state rank of S3.2 meaning that 21-80 EOs or 3,000-10,000 individuals or 10,000-50,000 acres and a global rank of G4 meaning that the population, or stand “is demonstrably secure to ineradicable due to being commonly found in the world”.

Mojave fishhook cactus was not observed on the Project site during the general biological and focused survey work conducted. Several individuals of this species were however, reported occurring in a small “rivulet” located in the hills to the west of the VWWRA during biological field work conducted in 2003 for the SCLA Specific Plan Amendment and Rail Service Project (Tom Dodson & Associates 2003). This location is within the ZOI of a portion the Project’s linear corridor but not within the boundaries of the Project site itself. Given the negative results and overall lack of rocky areas on the Project site, Mojave fishhook cactus is not expected to occur. However, should any individuals of this species be located onsite during preconstruction surveys and/or during monitoring, they would either be avoided by construction or transplanted along with all of the other cacti as required by San Bernardino County ordinance and the Native Desert Plant Protection Act.

Southern Skullcap

Southern skullcap occurs in mesic areas in chaparral, cismontane woodland and lower montane coniferous forest between 600-2,000 m (1,969-6,562 ft.) in elevation. This California endemic rhizomatous herb belonging to the Lamiaceae (Mint family) is not listed as threatened or endangered by the USFWS or CDFG, however it is designated as a List 1B.2 species by the CNPS, which means it is considered by the CNPS to be “rare, threatened, or endangered in California and elsewhere” and “fairly endangered” in the state. The CNPS also provides the state ranking of S2.2? and the global ranking of G4T2 for this species. Please refer to the Key to Tables on page 118 below for definitions of these designations.

Southern skullcap was historically known from two collections made by botanist Samuel Bonsall Parish in 1886 and 1915 respectively, presumably at the same site along the Mojave River located approximately six miles southeast of the Project site. Southern skullcap is considered to be absent from the Project site due to the lack of suitable onsite mesic habitats. Focused surveys were not considered to be warranted and thus not performed for this species.

San Bernardino Aster

San Bernardino aster occurs in cismontane woodland, coastal scrub and lower montane coniferous forest plant communities, as well as in meadows, seeps, marshes, streams, springs, and vernal-mesic valley/foothill grasslands. The species generally occurs at an elevation of 2,000 m (6,500 ft.). This California endemic rhizomatous herb belonging to the Asteraceae (Sunflower family) is not listed as threatened or endangered by the FWS or CDFG. However it is designated as a List 1B.2 species by the CNPS, indicating a considered status of “rare, threatened, or endangered in California and elsewhere” and “fairly endangered (20-80% occurrences threatened)” in California. The CNPS also provides a state ranking of S3.2 and the global ranking of G3 for this plant species. Please refer to the Key to Tables on page 118 below for CNPS designation definitions.

In 1924 San Bernardino aster was collected at a location south of Victorville, which is now the location of the Mojave Narrows Regional Park, approximately 9 miles southeast of the Project site. Focused surveys for this species were not considered warranted for this species as prerequisite habitat is not currently present in the Project area.

Table 4. Special Status Plants

Species	Protective Status [F=Federal; C=California]	Habitat	Flowering Period	Occurrence Probability
<i>Androstegium breviflorum</i> small-flowered androstegium	F: none C: none CNPS: List 2.3 State rank: S1.3 Global rank: G5	desert dunes, Mojavean desert scrub; 220-640 m (720–2,100 ft.)	April - September	Low (Onsite sandy soils marginal and limited. Not observed during focused surveys; however 2006 may have been a poor year for germination of many annual plant species and this species may have been undetectable as a result. One record in vicinity of site.)
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa lily	F: none C: none CNPS: List 1B.1 State rank: S2.1 Global rank: G2T2	chaparral, lower montane coniferous forest/springs, seeps, vernal mesic areas; 1000 and 2390 m (~3,280–7,841 ft.)	May – July	Absent (Onsite habitat lacking)
<i>Calochortus plummerae</i> Plummer's mariposa lily	F: none C: none CNPS: List 1B.2 State rank: S3.2 Global rank: G3	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley/foothill grassland; 100-1,700 m (328-5,577 ft.)	May-July	Absent (Onsite habitat lacking)
<i>Camissonia boothii</i> ssp. <i>boothii</i> Booth's evening primrose	F: none C: none CNPS: List 2.3 State rank: S2.3 Global rank: G5T4	Joshua tree woodland, pinyon-juniper woodland, sandy areas; 900-2,400 m (2,953–7,874 ft.)	March - April	Low (Onsite sandy soils marginal and limited. Not observed during focused surveys; however 2006 may have been a poor year for germination of many annual plant species and this species may have been undetectable as a result. CNDDDB records and reports from vicinity (Tom Dodson Associates [2003])

Table 4. Special Status Plants

Species	Protective Status [F=Federal; C=California]	Habitat	Flowering Period	Occurrence Probability
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> sagebrush loeflingia	F: none C: none CNPS: List 2.2 State rank: S2.2 Global rank: G5T2T3	desert dunes, Great Basin scrub, Sonoran desert scrub/sandy; 700 - 1615 meters (2,300-5,300 ft.)	April - May	Low (Onsite sandy soils marginal and limited. Not observed during focused surveys; however 2006 may have been a poor year for germination of many annual plant species and this species may have been undetectable as a result. One record nearby)
<i>Mimulus mohavensis</i> Mojave monkeyflower	F: none C: none CNPS: List 1B.2 State rank: S2.2 Global rank: G2 BLM sensitive	Joshua tree woodland, Mojavean desert scrub; dry sandy and/or gravelly washes along the Mojave River, 600-1,200 m (1,969-3,937 ft.)	April - June	Very Low (Onsite habitat limited. Not observed during focused surveys; however 2006 may have been a poor year for germination of many annual plant species and this species may have been undetectable as a result. Records nearby)
<i>Sclerocactus polyancistrus</i> Mojave fishhook cactus	F: none C: none CNPS: List 4.2 State rank: S3.2 Global rank: 4	Mojave desert scrub, Joshua tree woodland, Great Basin scrub; 640-2,320 m (2,100 to 7,610 ft)	April – July	Absent (Not observed; rocky soils generally lacking onsite)
<i>Opuntia basilaris</i> var. <i>brachyclada</i> Short-joint beavertail	F: none C: none CNPS: List 1B.2 State rank: S1.2 Global rank: G5T1	Mojave desert scrub, Joshua tree woodland, chaparral, riparian woodland, pinyon-Juniper woodland; 425-1,800 m (1,395-5,900 ft)	April – June	Absent (Not observed)
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i> Southern skullcap	F: none C: none CNPS: List 1B.2 State rank: S2.2? Global rank: G4T2	chaparral, cismontane woodland, lower montane coniferous forest/mesic areas; 600-2,000 m (1,969-6,562 ft.)	June – August	Absent (Not observed; onsite habitat lacking)

Table 4. Special Status Plants

Species	Protective Status [F=Federal; C=California]	Habitat	Flowering Period	Occurrence Probability
<i>Symphyotrichum defoliatum</i> San Bernardino aster	F: none C: none CNPS: List 1B.2 State rank: S3.2 Global rank: G3	cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic), near ditches, streams & springs; 2-2,040 m (6.5-6,693 ft.)	July – November	Absent (Not observed; onsite habitat lacking)

6.6.1 Special-status Amphibians

No special status amphibian species were observed during the surveys conducted for this Project. Based on the literature search, two sensitive amphibians, the Arroyo Toad (*Bufo californicus*) and the California Red-legged Frog (*Rana [aurora] draytonii*) have been reported from the vicinity of the Project site (See Table 5). These species and their potential to occur within the Project site are discussed below.

Table 5. Special Status Amphibians

Species	Protective Status [F=Federal; C=California]	Habitat	Occurrence Probability
<i>Bufo californicus</i> arroyo toad	F: endangered C: special concern	high-order streams, rivers, drainages; usually with sandy banks and bottoms	Absent (presumed extinct from segment of Mojave River adjacent to portions of the Project Site)
<i>Rana (aurora) draytonii</i> California red-legged frog	F: threatened C: special concern	variety of aquatic habitats with deep pools and emergent vegetation	Absent (presumed extinct from segment of Mojave River adjacent to portions of the Project Site)

Arroyo Toad

The Arroyo toad (*Bufo californicus*: ARTO) was federally-listed as endangered by the USFWS in 1994 (USFWS 1994). The ARTO is found in only very restricted areas of southern California and Baja California, Mexico. It is known from only a relatively few number of drainages in the coastal and desert areas, within nine counties, primarily along the southern California coast.

Many (approximately 36%) of these exist on U.S. Forest Service land. The Los Padres National Forest in Santa Barbara, Ventura, and Los Angeles Counties supports the majority of southern California's remaining intact large river systems, and may represent the only extant viable populations of ARTO (USFWS 1993). In the Los Padres National Forest, ARTO populations are concentrated in a relatively small number of areas but are considered to be substantial populations in terms of numbers of individuals. Populations elsewhere in the Angeles, Cleveland, and San Bernardino National Forests and adjacent areas are more numerous but appear to be relatively small in population size.

The northern-most populations of the ARTO exhibit habitat specialization apparently favoring shallow pools and open sand-gravel flood terraces of medium to large order intermittent or perennial streams that are subject to periodic flooding. Southern ARTO populations exhibit utilization of lower order (smaller) streams, deep cut canyons where suitable breeding sites may be patchy, and use adjacent upland habitats (USFWS 1998).

The ARTO is currently thought to have the following specific environmental requirements for breeding:

- Open streamside sand or gravel flats (canopy closure is rare along streams inhabited by arroyo toads because the channel is usually wide, and episodic flooding prevents the establishment of a riparian strip of tall trees), especially those bordering the breeding pools.
- Margins of old flood channels on low terraces, particularly on sand and in association with dense clumps of willows (arroyo toads make extensive use of the canopy margins of willow clumps on sand and gravel flats in the marginal zone during the late spring and summer)
- Canopy margins of live oaks or scrub oaks on higher terraces, or bordering the floodplain (arroyo toads have been observed within about 6 ft of the dripline of the oak canopies, most often where the branches were within 6-8 ft of the ground) (Sweet 1992).

The ARTO has more recently been reported in habitats inconsistent with these parameters, however, primarily in San Diego County (R. Fisher pers. com.). These primarily include recent observations of the ARTO in smaller, 1st order drainages, atypical of the larger, 2nd order stream and rivers that the ARTO is commonly associated with.

The ARTO typically breeds in pools whose average depth in cross section is 30 cm or less at the time of egg deposition. These pools have extensive areas of their bottoms covered by sand or well-sorted gravel deposits with a minimum of embedded silt. The late breeding season and long periods of dependence on surface water of ARTO larvae and juveniles restrict them from occurring in areas where the riverbed dries out by early summer.

Threats to the survival of this species include habitat degradation (i.e., urbanization, dam construction, etc.), drought, predation, and small population sizes (USFWS 1993). It has been

estimated that as of 1992 the ARTO has been extirpated from an approximate 75% of its former range (Sweet 1992).

On April 13, 2005, the USFWS designated critical habitat for the ARTO. Designated ARTO critical habitat is present upstream in the Mojave River from the Mojave Forks Dam to one mile downstream of the dam (USFWS 2005). This latter area of designated critical habitat for the Arroyo Toad is located approximately 3.5 miles southeast of the southernmost areas of Segment 3 of the Project site.

Although portions of the Mojave River located near/adjacent to portions of Segment 1 appear to be potentially suitable for the ARTO, there have been no confirmed reports of this species from this area of the Mojave River for many years. Stebbins (1951) collected 10 specimens from a sandy beach along the Mojave River approximately 3 miles north of Victorville on 5 May 1946. From 1908 to 1970 many specimens were collected from Victorville, Deep Creek, Miller Creek, and other localities along the Mojave River, an indication that the species was once locally common. Since the 1970s, however, there have been no verified ARTO records from the Victorville area. The closest known remaining populations of the ARTO are from the Mojave Forks Dam, Deep Creek, and the West Fork of the Mojave River, located more than 20 miles upstream of the Project Site (Tierra Madre Consultants 1995). In the 1990's there were rumors of ARTO occurring in the Victorville area, probably associated with the preceding significant El Nino event; however none of these reports have been confirmed (USFWS 2005). Additionally, The USFWS stated in the final designation of critical habitat for this species that the occupancy of the ARTO in this portion of the river was "questionable at best" and that the recovery plan for this species considers the ARTO "presumed extinct from this reach of the river." For these reasons, the arroyo toad is considered to be absent from the Project site and vicinity.

California Red-legged Frog

The California red-legged frog was listed as threatened by the USFWS on June 24, 1996. This species is also considered a CSC by the CDFG. It has been extirpated from approximately 70% of its historic range, and is currently being threatened throughout its current known range by a variety of human related impacts (e.g., urbanization, construction of reservoirs and water diversion facilities, and the introduction of exotic species {e.g., bullfrog [*Lithobates catesbienus* [formerly *Rana catesbiana*]], mosquito fish [*Gambusia affinis*], and crayfish [*Procambarus* sp.]}).

The historic range of the California red-legged frog extended from Point Reyes National Seashore, Marin County, California, coastally and from Redding, Shasta County, California, inland and southward to northwestern Baja California, Mexico (USFWS 1994). The California red-legged frog was once recorded from 46 counties in the state, but today is known from only 248 streams or drainages in 26 counties. Although the subspecies is still locally abundant in portions of the San Francisco Bay area and the central coast, only isolated populations have been recorded from the Sierra Nevada, northern Coast, and northern Transverse ranges. The California red-legged frog was previously thought to be extirpated from most of its range in the southern Transverse ranges and Peninsular ranges, however several previously unknown populations have been discovered in the recent past (USFWS 2001, Tierra Madre Consultants 1999).

The California red-legged frog occupies a fairly distinct habitat, combining both aquatic and riparian components. The species is typically found from sea level elevations to 1,534 m (5,000 feet). Adults prefer dense, shrubby or emergent riparian vegetation in close proximity to deep pools and slow moving water (FWS 1994). This species is highly aquatic, frequenting relatively quiet bodies of water such as pools along streams, ponds, reservoirs, springs, lakes, and marshes. (Stebbins 1951).

Threats to the California red-legged frog include a wide variety of human activities, including urban encroachment, construction of reservoirs and water diversions, release of contaminants, agriculture, and livestock grazing. These activities often destroy, degrade, and fragment habitat. The introduction of non-native predators and competitors (e.g., bullfrogs, crayfish, game fish species) also continues to threaten the viability of many California red-legged frog populations (USFWS 2002).

On April 13, 2006, the USFWS designated critical habitat for the species. The Mojave River (or any areas within San Bernardino County) is not included within designated critical habitat for the California red-legged frog. The nearest designated critical habitat for this species is located approximately 60 miles west of the Project site.

Numerous records of California red-legged frogs exist from the 1930s, along the Mojave River near Victorville, San Bernardino County (USFWS 2002). CNDDDB records cite one location from Mojave River in Victorville, approximately 6 miles southeast of the Project site (CNDDDB 2005). The year of this record is unknown, but like the records from the 1930's, this observation is considered historical in nature.

The Project site, although located in close proximity to and in some areas immediately adjacent to the Mojave River, does not contain habitat suitable for this species. Furthermore, the USFWS states that the species was "eliminated, in part by off-road vehicle activities, at the Mojave River above Victorville" and thus considers it to be extirpated from the area (USFWS 2002). For these reasons, the California red-legged frog is considered to be absent from the Project site and vicinity.

6.6.2 Sensitive Reptiles

One sensitive reptile, the desert tortoise was observed on the Project site during the surveys. Three other sensitive reptile species have been reported from the vicinity of the site (See Table 6). These include southwestern pond turtle (*Actinemys [Clemmys] marmorata pallida*), San Diego coast horned lizard (*Phrynosoma coronatum blainvillii*), and chuckwalla (*Sauromalus ater*, formerly *S. obesus*). Of these three species, the southwestern pond turtle is considered to have a low potential to occur along the site periphery; the San Diego coast horned lizard is considered to have a low potential to occur in the southernmost portion of Segment 1, and the chuckwalla is considered absent from the Project site. Table 6 presents the 14 sensitive reptile species that occur or have potential to occur on the Project site.

Table 6. Special Status Reptiles

Species	Protective Status (F=Federal, C=California)	Habitat	Occurrence Probability
desert tortoise (<i>Gopherus agassizi</i>)	F: threatened C: threatened	various desert habitats, creosote bush scrub, saltbush scrub, flats, hillsides, arroyos	Occurs (Live tortoises, burrows, scat, carcasses observed throughout the site)
southwestern pond turtle <i>Clemmys marmorata pallida</i>	F: special concern C: special concern	permanent or near permanent waters in varied habitats, to 8000'	Moderate at VWWRA plant only (2004 CNDDDB record from Victorville Wastewater Treatment Plant)
San Diego coast horned lizard (<i>Phrynosoma coronatum blainvillii</i>)	F: none C: special concern Other: BLM Sensitive	many scrub and woodland habitats, grasslands; loose soils	Absent (for most of the site, habitat lacking); Low (for southern-most approximate 1 mi. of Segment 3)
chuckwalla (<i>Sauromalus ater</i> formerly <i>obesus</i>)	F: none C: none Other: CNDDDB G5S4	Mojave and Sonoran deserts of southeastern California, southern Nevada and Utah, western Arizona and south to Sonora, Mexico and the mainland and islands of Baja. Requires rocky areas for shelter.	Absent (onsite habitat lacking)

Desert Tortoise

In a 1989 emergency ruling, the USFWS designated the desert tortoise (Mojave Population) as endangered. This included all desert tortoises living north and west of the Colorado River. In a 1990 final ruling, the USFWS designated the Mojave population of the desert tortoise as threatened (FWS 1994).

This member of the Testudinidae (Tortoise family) commonly utilizes creosote bush scrub, saltbush scrub, Joshua tree woodland and mixed Mojave scrub plant communities in the Mojave desert (Holland 1986). Desert tortoises are found in a variety of terrain types, including alluvial fans, valleys, rocky hillsides and washes. The latter terrain appears to be crucial in some areas for foraging in dry years and in social pursuits by the species. Burrows are typically found at the base of shrubs, in the interspaces between shrubs and occasionally in caliche soil bank areas or underneath boulders/rocks. Desert tortoises are known to utilize an average of 7-12 burrows at any given time (BLM 2006). Boarman's species account in the West Mojave Plan (BLM

2006) also notes that desert tortoises are known to occasionally share a single burrow with several other tortoises.

Tortoise activity is greatest during the spring and early summer, and to a lesser extent during the fall, however tortoises can be active at any time of the year during appropriate weather conditions. Although tortoises hibernate during the winter and typically emerge in late February or early March, dependant on weather, hatchlings and juveniles can be fairly active during the winter months. Adults will also emerge from their burrows to drink if water resources have been limited during the previous activity season and/or winter precipitation has provided standing water. Their activity is usually much reduced during hot summer months, but they may be active following summer rains or if temperatures are moderate. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

Desert tortoise home range size has been documented to be between 10-450 acres (4-180 hectares). Desert tortoise home range size varies, however, with sex, age, season, and density or availability of resources (USFWS 1994). Tortoises are most often detected by their scats and burrows. Tortoises themselves can sometimes be detected in burrows by reflecting sunlight inside the burrow with a mirror. Other tortoise sign include carcasses, or fragments thereof, courtship rings and drinking depressions. Any of these signs are an indication that tortoises either occur, or have recently occurred, at that particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven and other predators (e.g., kit fox, snakes, etc.), and disease. Off-road vehicles, military training maneuvers, mining, and livestock grazing also affect tortoise habitat by collapsing burrows, eroding soils, reducing availability of food plants, eliminating shrubs which would provide shade for tortoises and support for their burrows, and ultimately results in surface disturbance that promotes conditions more conducive to invasion by exotic plant species, which provide less nutritional value to tortoises than the native species that were replaced. Human activities, including dumping of garbage, landfills, roads, increased nesting opportunities, irrigation, and increased vehicle use have lead to increased numbers of common ravens in California deserts. Ultimately the increased predation on young tortoises by common ravens reduces recruitment into breeding populations.

More recently, a mycoplasmic respiratory disease, Mycoplasmosis, has been detected in desert tortoises. Mycoplasmosis is caused by *Mycoplasma agassizzi*, the organism responsible for the primary disease, and several secondary diseases and complications often are precipitated by mycoplasmosis which usually are ultimately directly responsible for the animal's death. The disease is most prevalent in the western Mojave but it also infects tortoises elsewhere in California and in Utah, Nevada, Arizona, Mexico, and in captive tortoise populations. The disease can be fatal and is apparently spreading through wild populations.

In 1992 the USFWS released and circulated the "Field Survey Protocol for any Non-Federal (and Federal) Action that May Occur Within the Range of the Desert Tortoise." This document details survey methodologies recommended by the USFWS for conducting different types of

desert tortoise surveys. Completed data forms have been appended to this report which document Desert tortoise survey findings (see Appendix 6).

The BLM and CDFG in 1992 developed the *California Statewide Desert Tortoise Management Policy* (Policy) to address declining populations of desert tortoise in the West Mojave Desert. This Policy was a product of a 1986 multi-interest workgroup and established definitive recommendations for improved protection of desert tortoise populations and habitat.

In this wide-ranging policy document, procedures were established to secure adequate compensation habitat and ensure compatible public land uses in varying quality desert tortoise habitats. Three categories of habitats (I, II and III) were recognized which addressed their importance to maintaining long-term viability of remaining populations on public lands. Four criteria were the basis for this categorization system. They included: 1) importance of the habitat for maintaining viable populations, 2) resolvability of conflicts, 3) tortoise densities, and 4) population statistics (stable, increasing, or decreasing).

The goals for BLM Category I habitat, the highest priority category which encompassed those areas considered to support the highest quality habitats and largest desert tortoise populations, were to “maintain stable, viable populations and protect existing tortoise habitat values; increase populations, where possible.” The goals for BLM Category II habitat were to “Maintain stable, viable populations and halt further declines in tortoise habitat values.” Lastly, the goals for BLM Category III habitat were to “limit tortoise habitat and population declines to the extent possible by mitigating impacts.” BLM Category III Habitats were considered by both BLM and CDFG at the time not essential to maintaining viable populations of the species; These habitats were generally known for irreconcilable land use conflicts or were in proximity to rapidly urbanizing landscapes; where low to medium density habitat is not contiguous with medium or high density habitat areas; and habitat where there a stable or decreasing population is present. Category 3 habitat is generally recognized as having relatively low tortoise densities, previous disturbance to habitat. The 1992 Statewide Policy was envisioned to be applied to both public lands managed by the BLM and private land development regulated by the CDFG.

Because the BLM habitat categorization system, by definition, only applied to public lands, the CDFG subsequently developed a desert tortoise “Crucial Habitat” map applicable to all state and private lands in the region. The boundaries of the CDFG designated Desert tortoise Crucial Habitat Areas closely coincided with the BLM Category I and II Desert Tortoise Habitat Areas. The CDFG, however, did not identify areas consistent with the BLM Category III Habitat or non-habitats. Over time, Crucial Habitat references were virtually replaced with the BLM habitat categories by all involved regulatory agencies in applying the objectives of the California Statewide Desert Tortoise Management Policy to regulatory actions.

In 1994, the USFWS designated approximately 6.4 million acres as “critical habitat” for the Mojave population of the desert tortoise (USFWS 1994). Critical habitat is defined as those areas that contain constituent habitat or biological elements considered essential to the conservation of the species, regardless of whether the species currently occupied those areas (Endangered Species Act of 1973, as amended, Section 3). All areas of the Project site are located outside of designated critical habitat for the desert tortoise. The nearest designated

critical habitat for this species is located approximately 3 miles north of the northern Project boundary within the Fremont-Kramer Desert Wildlife Management Area (DWMA) (see Appendix 1, Map 9).

Also in 1994, the USFWS published the *Desert Tortoise (Mojave Population) Recovery Plan*. Developed by a national team of specialists referred to as “the Desert Tortoise Recovery Team,” this recovery plan identified threats to the desert tortoise and its habitat. It also recommended actions to recover tortoise populations to the point where the species would persist as viable populations in the wild and eventually be removed from protections provided by the ESA.

The West Mojave Plan, adopted by the BLM in 2006 after 13 years of development by regulatory agencies and involved stakeholders, has provided a basis to fulfill objectives outlined in this recovery plan relative to both the ESA and CESA. It does so by identifying reserve areas to recover the desert tortoise and other special status species, as well as by establishing a fee structure to fund required reserve management actions. Private land development in the rapidly urbanizing portion of the West Mojave Desert, such as that occurring in Victorville, would be required to utilize this fee system in regulatory permitting endeavors. However, the required CEQA documents have not yet been completed to allow this application relative to private land development. Until CEQA documentation has been completed, both ESA and CESA incidental take permitting is required for private land development involving incidental take of the desert tortoise. Actions involving a federal agency nexus and thus requiring Section 7 ESA consultation however, can presumably utilize the West Mojave Plan for purposes of fulfilling federal requirements.

Focused surveys conducted for this Project detected desert tortoise throughout various areas of the site and ZOI (see Appendix 1, Map 10). Six desert tortoises, two within the proposed disturbance footprint of the Project and four within the adjacent ZOI, in addition to 39 desert tortoise burrows, 29 desert tortoise scat and five desert tortoise carcasses, were recorded. Additionally, eight live desert tortoises were reported occurring in the area covered by the SCLA Specific Plan Amendment and Rail Service Project area, which overlaps with portions of the VV2 Project site (Tom Dodson Associates 2003). Although not surveyed as part of the VV2 Project study because the area was reported by VWWRA personnel to have been previously cleared of desert tortoises, the fenced VWWRA facility was reported by Tom Dodson Associates (2003) as having active tortoise burrows. Tortoise exclusion fencing is present within some areas of the perimeter fence surrounding this facility. Although no federal land or designated critical habitat is encompassed within the Project area, adjacent BLM land has been designated Category III Desert Tortoise Habitat with an estimated 1984 density of 0-20 desert tortoises per square mile (BLM 2006). Photographs of representative habitat and species' sign observed in the Project area are presented in Appendix 2. Completed survey data forms are presented in Appendix 6.

Southwestern Pond Turtle

Although not a listed species, the southwestern pond turtle has been designated a species of special concern by the CDFG and is protected under state law. The western pond turtle is also a BLM-designated sensitive species. Its geographic range extends from the Monterey Bay area

south through the coastal regions of California to northwestern Baja California, Mexico, including the Mojave River (Federal Register 1993). The elevational range of this member of the Emydidae (Box and aquatic turtle family) ranges from sea level to 1,830 m. (6,000 ft.). (Zeiner et. al 1988). However, the majority of populations are found below 1,371 m. (4,498 ft.) (Holland 1991). Historically, the southwestern pond turtle occurred in a wide variety of permanent and intermittent aquatic habitats within its geographic range. Currently, it occurs in greatly reduced numbers, or is completely extirpated from areas where it once occurred. Holland (1991) found that the species has been extirpated from most southland rivers (Los Angeles, San Gabriel, and Santa Ana). Reasons for its decline include water projects; grazing; vehicle related mortality; vandalism; predation; loss, degradation and fragmentation of wetland and terrestrial habitats; exploitation by the pet trade, and drought (USFWS 1993).

Holland (1991), Stebbins (1985), and Zeiner (1988) noted that the southwestern pond turtle is found in a variety of natural aquatic habitats including ponds, lakes, marshes, vernal/ephemeral pools, sinkhole ponds, rivers, streams, estuaries, and saltwater. Stebbins (1985) further noted that the southwestern pond turtle is found in woodland, grassland, and open forest habitats. In addition to natural waterways, the southwestern pond turtle may also be found in watercourses altered by humans such as irrigation ditches, canals, reservoirs, excavated farm ponds, mill ponds, and sewage treatment plants (Holland 1991). These "human-modified" aquatic habitats are usually in close proximity to natural watercourses where the turtles occur. Aquatic habitats favored by the southwestern pond turtle usually contain watercress (*Rorippa* spp.), cattail (*Typha* spp.), waterlily (*Nymphaea* spp.), and other aquatic vegetation.

Basking sites in close proximity to the water, providing quick, easy escape from predators and aiding in thermoregulation, are an essential habitat requirement of the species. Basking sites commonly used by the southwestern pond turtle may be partially submerged logs, rocks, cattail mats, mud banks, wooden planks, or other human-generated debris (Stebbins 1985, Holland 1991). In addition to the presence of basking sites, southwestern pond turtles are also associated with areas with an open canopy (i.e. areas with few trees and little shade). This allows for maximum basking opportunities to aid in thermoregulation.

Hatchling and juvenile southwestern pond turtles require more specialized habitats such as shallow water with dense vegetation (e.g. reeds [*Juncus* spp.], sedges [*Carex* spp.], cattail [*Typha* spp.], and tules [*Scirpus* spp.]) which offers cover from predators such as fishes, bullfrogs, snakes, wading birds, and mammals (Holland 1991, Federal Register 1993, Ziener et. al 1988).

Southwestern pond turtles are active year round in their southern range and can be observed basking on warm, sunny days. Females lay their eggs from April through August, although egg-laying times vary with locality and weather (Stebbins 1985, Holland 1991). Although appropriate nesting criteria has yet to be documented, Holland (1991) reported that the majority of nest sites were located approximately 17 m. to 402 m. away from the water, and were located on dry, well-drained soils with significant clay/silt content and low (<15 degree) slope. Nest sites are associated with open areas dominated by native grasses or herbaceous annuals, with relatively few shrubs or trees.

The Southwestern pond turtle has been reported from several locations along the Mojave River (CNDDDB 2006). This includes one 2004 record from “a waste water treatment plant 0.7 miles west of Highway 18, 6 miles north-northwest of Victorville”. This record places the southwestern pond turtle at the VVWRA treatment plant, presumably within one of the sewer treatment ponds, which are located immediately adjacent to where a portion of Segment 1 of the Project’s reclaimed water pipeline is proposed to be constructed (see Appendix 1, Maps 2 and 4). Some of the sewer ponds located within the VVWRA facility provide potentially suitable habitat for this species.

Focused surveys for this species, however, were not conducted due to the following reasons: 1) the proposed reclaimed water pipeline is located entirely within the existing compacted perimeter access road around the VVWRA sewage ponds thereby reducing potential to impact pond turtles and their nests, which might otherwise be located within adjacent habitats; 2) negative results at any given time would be inconclusive as the species may occur at any time (despite negative survey results), as the sewer treatment ponds are located immediately adjacent to the Mojave River and gaps in the fence, under gates, etc. provide permanent access to pond turtles traveling between the river and the VVWRA plant sewer ponds; and 3) biological monitors familiar with this species biology would be aware of the potential of the southwestern pond turtle to occur in this specific area of the site and would conduct preconstruction clearance surveys (as they would be required to do for the desert tortoise) in these areas immediately prior to construction and monitor the activity to prevent potential impacts to this species.

San Diego Coast Horned Lizard

The San Diego coast horned lizard, commonly referred to as “horny toad,” is not listed as threatened or endangered by either the USFWS or CDFG, but is designated a CSC by CDFG. Populations of this member of the Phrynosomatidae (horned lizard, spiny lizard, zebratail, fringe-toed lizard family) are declining due to loss, degradation and fragmentation of suitable habitat, extensive collecting, and introduction of the argentine ant (*Linepithema humile* [formerly *Iridomyrmex humilis*]), which out-compete, often eliminating the native harvester ant species (*Pogonomyrmex* sp.) eaten by horned lizards.

The San Diego coast horned lizard occurs throughout most of southern California, west of the desert and Cascade-Sierran highlands, ranging south through Baja California, Mexico (Stebbins 1985). It has been recorded from Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura counties of southern California (Hagar 1992). Its elevational range extends from sea level to about 1,800 m. (6,000 ft.) in southern California Mountains (Zeiner et al 1988). The San Diego coast horned lizard is found in a variety of habitats including coastal sage scrub, chaparral, broad-leaved woodlands, washes, and grasslands. Its diet consists primarily of harvester ants, although other insects are also readily taken (Hagar 1992). Habitat requirements of the San Diego coast horned lizard include: the presence of harvester ants; loose sandy soil where it buries itself; cover (rocks or brush) to escape from predators; and sunny/warm basking sites (Stebbins 1985, Sherbrooke 1981). Surface water is not considered a primary habitat requirement of this species (Brian McGurty personal communication). Horned lizards have, however, been observed drinking droplets of dew, or rain, off the leaves of vegetation or the surface of smooth rocks (Sherbrooke 1981).

There is one record for the San Diego coast horned lizard from 0.5 miles west of Oro Grande Railroad Station, which would be approximately one mile south of the Project site. Typically, the species is associated with cismontane habitats, however populations are also known from the Mojave Desert along the base of the San Gabriel and San Bernardino Mountains from the Antelope Valley California Poppy State Reserve to Joshua Tree National Park (Jennings and Hayes 1994). The Mojave River, however, provides an uninterrupted riparian corridor through this area of the desert. Other cismontane reptiles such as the southwestern pond turtle, southern alligator lizard (*Elgaria multicarinatus*), western fence lizard (*Sceloporus occidentalis*), and western skink (*Eumeces skiltonianus*) are known to occur throughout the Mojave River within this riparian corridor. This patterns seen with birds and mammals as well and would explain the record of the San Diego coast horned lizard. The species account in the West Mohave Plan for the San Diego coast horned lizard states that the population along the Mojave River, near Oro Grande, is considered to be extirpated (Jennings and Hayes, 1994). There are additional records for this species generally from the foothill areas of the San Bernardino Mountains, which are located in the vicinity of the southern-most portions of Segment 3 of the electrical transmission line (see Appendix 1, Map 4). For these reasons, in addition to the general lack of this species' preferred habitat outside of the Mojave River riparian corridor, the San Diego coast horned lizard is considered to be absent from most of the Project site; the exception being the southern approximate one mile or so of Segment 3, in which this species is considered to have a low occurrence potential.

Chuckwalla

The chuckwalla is not listed as threatened, endangered, and is not designated as a CSC by the USFWS or CDFG respectively. Nevertheless, the chuckwalla is included on the California Special Animals list (CDFG 2006). This species is assigned a Global rank of G5 and a State rank of S4 by the CNDDDB, meaning that the species is "demonstrably secure; commonly found throughout its historic range" both state and nationwide. The chuckwalla is almost exclusively herbivorous, eating annual wildflowers and some perennial plant species and rarely insects. This species occurs throughout the deserts of southeastern California from southern Nevada to northwest Baja and Sonora Mexico, east to central Arizona and southern Utah. The chuckwalla is associated with creosote bush scrub, saltbush scrub, Joshua tree woodland and more specifically, rocky areas. Rocks provide shelter as well as basking sites.

The chuckwalla has been reported from a boulder field along a ridgeline approximately 0.3 miles south of Oro Grande Canyon Road and 1.3 miles west of Quartzite Mountain, 1.5 miles northeast of Oro Grande, which is approximately three miles east of the Project site (CNDDDB 2005). Requisite rocky areas are not present on the Project site. As a result, the chuckwalla is considered to be absent.

6.6.3 Special Status Birds

The literature review in combination with the results of the field surveys resulted in a total of 26 special status bird species either being reported from, or occurring in the vicinity of the Project site. A total of 19 of these species were observed during the field surveys. These included a variety of migratory and resident species. Two of the species observed, the bald eagle

(*Haliaeetus leucocephalus*) and Swainson's hawk (*Buteo swainsoni*) are listed as endangered and/or threatened by the USFWS and CDFG, while the remaining 18 species are either designated as CSC by the CDFG, "Watch List" species by the Audubon Society, on the United States Bird Conservation (USBC) "Watch List", or on the American Bird Conservancy (ABC) "Green List," or any combination of these. Many of these species are only considered to be sensitive by the resource agencies while they are actively nesting. Additionally, all migratory nongame bird species are protected by the Migratory Bird Treaty Act and also by California Fish and Game Code Section 3513. Impacts to nesting and migratory bird species are addressed in Sections 7.3.1 through 7.3.3. Similarly, mitigation for anticipated impacts to nesting and migratory birds is discussed in Section 8.1.6. Each special status bird species and their respective occurrence potentials within the Project site and vicinity are discussed separately below.

Cooper's Hawk

Nesting Cooper's hawks (*Accipiter cooperi*) are managed as a CSC by the CDFG and afforded protection under the MBTA and California Fish and Game Code (Sections 3503, 3503.5, 3513, and 3800). The Breeding Bird Survey conducted between 1980 and 1996 documented an approximate 7.5% decline in this species statewide (Stephenson and Calcarone 1999). A member of the Accipitridae (Hawk family), Cooper's hawk typically nests in wooded areas, often near streams and forage over adjacent areas, primarily preying other, smaller bird species.

Cooper's hawk was observed flying over the VV2 Project site on several occasions during the field surveys. Although suitable nesting habitat is not present on the Project site, this species almost certainly nests in the adjacent riparian habitat within the Mojave River and forages over the Project site. During winter, Cooper's hawk populations increase in the area (due to migratory birds arriving from more northerly latitudes), and a corresponding increase in foraging birds is expected on site.

Table 7. Special Status Birds

Species	Protective Designation (F=Federal, C=California)	Habitat	Occurrence Probability
Cooper's hawk (<i>Accipiter cooperii</i>)	F: MBTA C: special concern (nesting only), F&G Code	nests in woodlands and forests; occurs in many habitats in winter	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Occurs
tricolored blackbird (<i>Agelaius tricolor</i>)	F: MBTA C: special concern (nesting colony)	marshes for nesting; forages in fields and scrub habitats	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Low
long-eared owl (<i>Asio otus</i>)	F: MBTA C: special concern, F&G Code	riparian habitats, live oak stands, and dense thickets of other trees for nesting; occurs in desert as an uncommon winter visitor only.	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Moderate
burrowing owl (<i>Athene cunicularia</i>)	F: Bird of Conservation Concern (BCC), MBTA C: special concern (burrow sites), F&G Code Other: BLM Sensitive	nests in burrows adjacent to grasslands, scrub habitats, and agricultural areas	Nesting: Occurs (observed adjacent to [within 300'] various areas of the site; many burrows exhibiting owl sign observed on- and offsite as well) Foraging: Occurs
Swainson's hawk (<i>Buteo swainsoni</i>)	F: BCC, MBTA C: threatened (nesting only), F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List"	grasslands, plains, agricultural areas. Nests in tall trees (including Joshua trees) near waterways.	Nesting: Low (rarity of species nesting in area) Foraging: Occurs (during migration only)
Costa's hummingbird (<i>Calypte costae</i>)	F: MBTA C: F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List" (nesting only)	arid lands in the southwest. Nests in trees and shrubs	Nesting: Moderate Foraging: Occurs

Table 7. Special Status Birds

Species	Protective Designation (F=Federal, C=California)	Habitat	Occurrence Probability
Lawrence's goldfinch (<i>Carduelis lawrencei</i>)	F: MBTA C: F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List" (nesting only)	nests around riparian thickets, forages in adjacent weedy fields	Nesting: Very Low (onsite habitat marginal) Foraging: Occurs (during migration only)
Vaux's swift (<i>Chaetura vauxi</i>)	F: MBTA C: special concern (nesting only), F&G Code	nests in hollowed out tree trunks; forages over openings in forest and along stream courses.	Nesting: Absent (out of breeding range) Foraging: Occurs (during migration only)
northern harrier (<i>Circus cyaneus</i>)	F: MBTA C: special concern (nesting only), F&G Code	nests in marshes; forages over grasslands, shrublands, agricultural areas	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Occurs
western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	F: Migratory Nongame Bird of Management Concern, MBTA C: endangered, F&G Code	nests in cottonwood-willow forest; in s. Calif., known to nest at Kern River, Prado Basin, Colorado River	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Very Low
hermit warbler (<i>Dendroica occidentalis</i>)	F: MBTA C: F&G Code Other: Audubon "Watch List", ABC "Green List" (nesting only)	coniferous forest	Nesting: Absent (habitat lacking) Foraging: Occurs (during migration only)
yellow warbler (<i>Dendroica petechia</i>)	F: MBTA C: special concern (nesting only), F&G Code	riparian forest and woodland; nests along Mojave River, Santa Ana River, Kern River, and many others in s. Calif.	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Moderate (may nest in adjacent Mojave River)
southwestern willow flycatcher (<i>Empidonax trailii extimus</i>)	F: endangered (subspecies), MBTA C: endangered (full species), F&G Code	riparian woodlands	Nesting: Absent (habitat lacking; may nest in adj. Mojave River) Foraging: Low
prairie falcon (<i>Falco mexicanus</i>)	F: MBTA C: special concern (nesting only), F&G Code	nests in cliffs; forages over open terrain, agricultural areas	Nesting: Absent Foraging: Occurs

Table 7. Special Status Birds

Species	Protective Designation (F=Federal, C=California)	Habitat	Occurrence Probability
bald eagle (<i>Haliaeetus leucocphalus</i>)	F: threatened (proposed to be delisted), Bald and Golden Eagle Protection Act, MBTA C: endangered, F&G Code	winters at deep inland lakes and reservoirs	Nesting: Absent Wintering: Low Foraging: Occurs during migration, but foraging unlikely
yellow-breasted chat (<i>Icteria virens</i>)	F: MBTA C: special concern (nesting only), F&G Code	riparian forest and woodland; nests along Mojave River, Santa Ana River, Kern River, and many others in s. Calif.	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Low (during migration only)
loggerhead shrike (<i>Lanius ludovicianus</i>)	F: MBTA C: special concern, F&G Code	for nesting, open habitats with small trees or large shrubs; winters in open habitats, including agricultural fields; widespread but declining in s. Calif.	Nesting: High Foraging: Occurs
osprey (<i>Pandion haliaetus</i>)	F: MBTA C: special concern, F&G Code	wetlands and open water	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Occurs (during migration, but foraging unlikely)
nuttall's woodpecker (<i>Picoides nuttallii</i>)	F: MBTA C: F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List (nesting only)	riparian areas	Nesting: Absent (habitat lacking; nests in adj. Mojave River) Foraging: Occurs
summer tanager (<i>Piranga rubra</i>)	F: MBTA C: special concern (nesting only), F&G Code	mature riparian forest and woodland; in s. Calif. known to nest at Morongo Valley, Victorville, Kern River, Colorado River	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Low

Table 7. Special Status Birds

Species	Protective Designation (F=Federal, C=California)	Habitat	Occurrence Probability
white-faced ibis (<i>Plegadis chihi</i>)	F: MBTA C: special concern, F&G Code	freshwater marsh with dense emergent vegetation for breeding	Nesting: Absent (habitat lacking) Foraging: Absent (occurs in areas of the Mojave River during migration)
rufous hummingbird (<i>Selasphorus rufus</i>)	F: MBTA C: F&G Code Other: Forest Service sensitive, USBC "Watch List", Audubon "Watch List", ABC "Green List" (nesting only)	nests in Pacific northwest	Nesting: Absent (habitat lacking, out of range) Foraging: Occurs (during migration only)
brewer's sparrow (<i>Spizella breweri</i>)	F: BCC, MBTA C: F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List" (nesting only)	Great Basin sage scrub	Nesting: Absent (habitat lacking) Foraging: Occurs (in winter and migration only)
chipping sparrow (<i>Spizella passerina</i>)	F: MBTA C: F&G Code Other: CNDDDB ranking G5S3S4 (nesting only)	oaks and moderate to high elevation habitats	Nesting: Absent (habitat lacking) Foraging: Occurs (in winter and migration only)
California thrasher (<i>Toxostoma redivium</i>)	F: MBTA C: F&G Code Other: USBC "Watch List", Audubon "Watch List", ABC "Green List"	thickets	Nesting: Absent (habitat lacking) may nest in adj. Mojave River. Foraging: Occurs
Le Conte's thrasher (<i>Toxostoma lecontei</i>)	F: BCC, MBTA C: Special Concern, F&G Code Other: BLM sensitive, USBC "Watch List", Audubon "Watch List", ABC "Green List"	variety of arid habitats, often in open, sparsely vegetated areas (e.g. saltbush scrub, sparse creosote bush scrub), often nests in cactus	Nesting: Moderate Foraging: Occurs (observed along portions of Segment 1)
least Bell's vireo (<i>Vireo bellii pusillus</i>)	F: endangered, MBTA (nesting), MBTA C: endangered (nesting), F&G Code	willow riparian woodlands	Nesting: Absent (habitat lacking), may nest in adj. Mojave River. Foraging: Low

Table 7. Special Status Birds

Species	Protective Designation (F=Federal, C=California)	Habitat	Occurrence Probability
gray vireo (<i>Vireo vicinior</i>)	F: MBTA C: special concern, F&G Code	pinyon-juniper woodland, Mojave juniper scrub, chamise and redshank chaparral	Nesting: Low (in Mojave Juniper Scrub vegetation community in southern ½ of Segment 3 only) Foraging: Low- Moderate

Tricolored Blackbird

The Tricolored blackbird (*Agelaius tricolor*) is managed as a CSC by the CDFG (while nesting) and protected by the MBTA and Fish and Game Code Section 3513. This highly colonial member of the Icteridae (Blackbird and relatives Family) primarily nests in freshwater wetland areas with tall thickets of cattails or tules, and in willow thickets, blackberry brambles, and wild rose. It typically forages over nearby field and scrub habitats. The Tricolored blackbird is mostly a resident of California, where it is believed to be steadily declining (CDFG 2005).

The Tricolored blackbird was not detected by the field work conducted for this Project. This species was reported occurring within an area of the Mojave River during surveys conducted for the SCLA Specific Plan Amendment and Rail Service Project (Tom Dodson Associates 2003). Requisite nesting habitat for this species is not present on the Project site, although the species may forage over the site.

Long-eared Owl

The Long-eared owl (*Asio otus*) is not listed as threatened or endangered by either of the state or federal regulatory agencies. This species is however managed as a CSC by the CDFG and protected by the MBTA and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800. This member of the Strigidae (Typical Owl family) is an uncommon winter visitor of Southern California deserts. Long-eared owls are closely associated with riparian habitats, however also uses stands of live oak and other dense thickets of trees for nesting.

The Long-eared owl was not observed on the Project site during the field work conducted for this Project. It has been reported to occur in the vicinity of the Segment 3 portion of the electrical transmission line corridor. The species may also occur within the Mojave River in the vicinity of the Project site during the winter and possibly forage over the site.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a small, tan, short-tailed, ground-dwelling owl that occupies underground burrows. A member of the Strigidae (Typical Owl family), the burrowing owl is associated with grasslands and other arid open terrain, including Mojave creosote bush

scrub, throughout much of the western United States. Burrowing owls are opportunistic in their selection of burrows, typically utilizing the burrows of small mammals (e.g., kit fox), but also use desert tortoise burrows, drain pipes, culverts, and other suitable cavities at or below ground level. In California, the species often occurs in association with colonies of the California ground squirrel (*Spermophilus beecheyi*), where it makes use of the squirrel's burrows. The entrance of the burrow is often adorned with animal dung, feathers, debris, and other small objects. The species is active both day and night, and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls, nest burrows are a critical component of their habitat. In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. In spite of their apparent tolerance to human activities, burrowing owl populations in California are clearly declining and, if declines continue, the species may qualify for listing under the state and/or federal ESA(s) (CDFG 1995). The declines in burrowing owl populations are attributed to loss and degradation of habitat, to ongoing residential and commercial development, and to rodent control programs. The burrowing owl is currently designated a CSC by the CDFG, managed as a Bird of Conservation Concern (BCC) by the USFWS, is considered "sensitive" by the BLM, protected by the MBTA and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

As depicted in Appendix 1, Map 11, evidence of burrowing owls (i.e., borrows exhibiting whitewash, feathers, pellets, etc.) in addition to live burrowing owls were observed throughout various areas of the Project footprint, 500-foot buffer areas, and within the 2,400-foot ZOI during the focused burrow search and during general biological and focused survey work conducted for other species (i.e., Mohave ground squirrel, desert tortoise). A total of at least four live burrowing owls were observed occupying separate burrow locations in and around different areas of the Project site during the surveys. One was in the ZOI of the one of the construction staging areas, approximately 900 feet northwest of the northwest corner of the western construction staging area. Another was in the buffer zone of Segment 1 of the transmission line corridor, approximately 300 feet southwest of the ROW. The two other owls were observed within an area of Segment 2 of the transmission line corridor. One was outside the existing transmission line corridor approximately 120 feet away from one of the proposed pulling areas for line stringing. The other was located within the existing transmission line corridor, directly under the existing Hoover transmission line, approximately 220 feet away from the centerline of the location of the proposed new line. Although most of these owls are technically offsite (outside the proposed disturbance footprint), three are within the 500-foot buffer zone area as defined by the Burrowing Owl Consortium Survey Guidelines. One burrowing owl carcass/remains was also observed at one location along Segment 1. Additionally, at least 40 burrows of small mammals (primarily ground squirrels), 36 burrows or colonies of kit fox, and 39 desert tortoise burrows were observed across much of the site and within the ZOI. These burrows provide ample nesting opportunities for this fossorial species, and many of the burrows observed that exhibited burrowing owl sign are either currently or were historically also occupied by kit foxes and or desert tortoises.

It should be noted, however, that due to the timing of authorizations to conduct biological surveys in some areas, focused surveys for the burrowing owl conducted during the 2006

nesting season were not conducted in some areas (i.e., portions of Segment 1, all of Segment 2 and all of Segment 3) of the Project site.

Swainson's Hawk

Swainson's hawk is listed as threatened by the CDFG. Swainson's hawk is also managed as a sensitive by the U.S. Forest Service, on the USBC and Audubon "Watch Lists" and on the ABC "Green List." Additionally, this species is also protected by the MBTA and under California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800. The Swainson's hawk population in California numbers between 700 and 1,000 breeding pairs (most of which nest in the Central Valley), which is approximately 10 percent of the historic population (www.swainsonshawk.org). This 90% decline in the Swainson's hawk population in California has been ongoing since the early 1900s and is primarily due to new suburban development of agricultural lands. This species has evolved a strong cooperative relationship with agriculture, which is being rapidly replaced with residential and commercial development throughout our state. This large (45.72 cm [18 in.] long), long/broad-winged (1.24 m [49 in.] wingspan), long-tailed hawk's diet primarily consists of small mammals, however reptiles, other birds, and insects are also taken. This member of the Accipitridae (Hawk family) nest in tall trees (including Joshua trees), often near rivers, creeks and canals, often adjacent to agriculture and pasture lands. In southern California, this species nests in the Antelope Valley, and nested in the early 1980s in the eastern Mojave Desert (Lanfair Valley).

Swainson's hawks were observed flying over the Project site on two occasions during the field surveys. These individuals were migrating north along the Mojave River. Swainson's hawks only very rarely breed or nest in southern California. Considering the thoroughness and timing of the biological surveys on the Project site, AMEC biologists are confident that this species would have been detected, had it been nesting onsite. For this reason, nesting Swainson's hawks are considered to be absent from the Project site.

Costa's Hummingbird

Costa's hummingbird (*Calypte costae*) is not listed as endangered or threatened by either of the state or federal regulatory agencies, nor is it designated as a CSC by the CDFG. However, this species is managed as sensitive by the U.S. Forest Service, on the USBC and Audubon "Watch List," on the ABC "Green List," protected by the MBTA, Fish and Game Code Section 3513 and included on the CDFG 2006 Special Animals list. This small, attractive member of the Trochilidae (Hummingbird family) nests in a wide variety of trees, shrubs, cacti, woody forbs, and sometimes vines in a variety of habitats, including Mojave Desert scrubs, throughout the arid southwest (CDFG 2005).

Costa's hummingbird was detected onsite on several occasions during the field work conducted for the VV2 Project. Although the Project site does not provide an abundance of nesting habitat for this species, they could nest in the ornamental trees surrounding the rural home sites, in the larger washes bisecting the site, and in the riparian habitat located within the adjacent Mojave River. For this reason, Costa's hummingbird is considered to have a low potential to nest on the Project site.

Lawrence's Goldfinch

Lawrence's goldfinch (*Carduelis lawrencei*) is not listed as endangered or threatened by either of the state or federal regulatory agencies, nor is it designated as a CSC by the CDFG. This species is however, included on the CDFG 2006 Special Animals list, protected by the MBTA, Fish and Game Code Section 3513, on the USBC and Audubon "Watch List", and on the ABC "Green List". This colorful, seed-eating member of the Fringillidae (Fringilline and Cardueline Finch family) breeds in open oak or other arid woodlands and chaparral, near water. Typical habitats in southern California include desert riparian, palm oasis, pinyon-juniper, and lower montane habitats. Nearby herbaceous habitats often used for feeding (CDFG 2005)

Lawrence's goldfinch was detected onsite on several occasions during the field work conducted for this Project. Nesting habitat, however, is not present on the Project site. As a result this species is expected to utilize the site for foraging during migration only.

Vaux's Swift

Vaux's swift (*Chaetura vauxi*) is designated a CSC by the CDFG, protected by the MBTA and Fish and Game Code Section 3513. This drab-colored member of the Apodidae (Swift family) nests in hollowed out tree trunks in coniferous forests from Western British Columbia south to northwestern California. This species generally forages over openings in forest and along stream courses where it eats high flying insects.

Vaux's swift was observed foraging over the site during spring migration. However, this species does not nest in southern California. Therefore, Vaux's swift is expected to forage over the site during migration only.

Northern Harrier

The Northern harrier (*Circus cyaneus*) was observed flying over the Project site on at least one occasion. This medium-sized (41.91 cm [16.5 in. in length), long-winged (1 m [42 in.] wingspan), long-tailed member of the Accipitridae (Hawk family) predaes small mammals, reptiles, amphibians, and birds. Northern harriers nest in marshes and use adjacent areas (e.g., sage scrubs, grasslands, riparian, agriculture) for foraging and breeding territories. Nesting Northern Harriers are managed as CSC by the CDFG and afforded protection under the MBTA and under California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

Although observed either foraging or migrating over the Project site, nesting habitat for this species is not present on the Project site. The species may nest, however, in the adjacent Mojave River.

Western Yellow-billed Cuckoo

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is state-listed as endangered and a candidate for federal-listing as threatened or endangered west of the Rocky Mountains. The western yellow-billed cuckoo is also afforded protection under the MBTA and Fish and Game Code (Section 3513). While this distinctive member of the Cuculidae (Cuckoo,

Roadrunner, and Ani family) is relatively common east of the Rocky Mountains, there is concern for loss or degradation of the subspecies' riparian habitat in the West. Its breeding range formerly included most of North America from southern Canada to Mexico. Western yellow-billed cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods and willows. Dense understory foliage appears to be an important habitat feature.

The western yellow-billed cuckoo was not detected on the Project site during the surveys conducted. There is a 1978 record of this species from the Mojave River, approximately 11 miles southeast of the Project site (CNDDDB data), and it was been detected in the same area several times throughout the late 1980s and early 1990s (S. Myers pers. comm.) . The Project site lacks the requisite riparian habitat for this species. Therefore, the western yellow-billed cuckoo is considered to be absent from the Project site. There is, however, potentially-suitable habitat for this species located within the Mojave River which is immediately adjacent to a portion of the Segment 1 reclaimed water pipeline. For this reason, and due to the rarity of this species in California, AMEC considers there to be a very low potential for this species to occur (for foraging only) on this area of the Project site. Potential indirect impacts to this species as a result of Project activities (i.e., loud noise, operation of heavy equipment, etc.) conducted during the nesting season (generally 15 Feb. through 31 Aug.) are remotely possible, however, due to the proximity of portions of Segment 1 to potentially suitable habitat. For this reason, construction activities (i.e., reclaimed water pipeline installation) within the areas of Segment 1 located in proximity to riparian vegetation communities within the Mojave River would be conducted outside the nesting season of this species. Additionally, biological monitoring during construction in this area of the Project site would further ensure that no impacts to this species or its habitat result from Project activities. A detailed assessment of potential indirect impacts to this species is discussed in Section 7.3.3. Recommended mitigation is discussed in Section 8.1.6.

Hermit Warbler

The hermit warbler (*Dendroica occidentalis*) is not listed or designated as a sensitive species by either the CDFG or USFWS, however is included on the CDFG 2006 Special Animals list, on the Audubon "Watch List", the ABC "Green List", protected under the MBTA and Fish and Game Code (Section 3513). This member of the Parulidae (Wood-Warbler family) is an uncommon spring and fall migrant in the area. Hermit warblers nest in coniferous forests in the Pacific Northwest where it generally prefers mature stands of pine and douglas fir. This species is also found in lower densities in subalpine forests dominated by subalpine fir, lodgepole pine, and other conifers. In the California mountains, Hermit warblers are found in forests of red and white fir, sugar, ponderosa, jeffrey, and lodgepole pine, and giant sequoia. This species generally avoids areas with a high deciduous volume; and does not nest in riparian or clearcut areas.

One pair of hermit warblers was observed within the ZOI surveys conducted for the desert tortoise on Segment 1 of the electrical transmission line corridor. Because this species does not nest in southern California, nesting hermit warblers are considered absent from the site. This species is only expected to forage on the site during migration.

Yellow Warbler

The yellow warbler (*Dendroica petechia*) is managed as a CSC by the CDFG (while nesting) as well as afforded protection under the MBTA and protected by Fish and Game Code (3513). This species is typically found in riparian deciduous habitats during the summer. This member of the Parulidae (Wood-Warbler family) also breeds in montane shrubbery in open conifer forests. During migration, yellow warblers routinely visit woodlands, forests, and shrub habitats (CDFG 2005).

Yellow warbler was not observed during the surveys conducted for this Project. Furthermore, although the species is considered to have the potential to nest in the riparian habitats within the Mojave River, requisite nesting habitat is not present on the Project site for this species. There is a moderate potential for it to occur on the site during migration and/or for foraging.

Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax trailii extimus*) is listed as state and federally endangered by the CDFG and the USFWS, as well as protected by the MBTA and Fish and Game Code Section 3513. This subspecies of the willow flycatcher (*E. t. trailii*) was formerly considered a common summer resident in southern California's lowland willow thickets (Grinnell and Miller 1944). This species has suffered significant declines through habitat loss. This factor, along with the large-scale invasion of the coastal lowlands by brown-headed cowbirds (*Molothrus ater*) in the 1920s, has resulted in the flycatcher being nearly extirpated from southern California (Garrett and Dunn 1981). Recent surveys have revealed surviving populations along the Santa Margarita and San Luis Rey rivers in San Diego County, in the San Bernardino Mountains and along the Mojave River in San Bernardino County, in the lower Colorado River Valley, and along the Santa Ynez River in Santa Barbara County, the Santa Clara River in Ventura County, and the South Fork of the Kern River in Kern County (Unitt 1987, Marshall 2000). On October 19, 2005, the USFWS designated critical habitat for the southwestern willow flycatcher. This final rule divided critical habitat for this species into separate units. The Mojave Management Unit is located within the Mojave River immediately adjacent to (within an approximate 150 feet of) portions of Segments 1 and 2 of the Project site (see Appendix 1, Map 12).

The southwestern willow flycatcher was not observed on the Project site during any of the field work conducted. Obligate riparian nesting habitat, although potentially present within adjacent offsite habitat in the Mojave River, is not present onsite. However, portions of Segment 1 are in close proximity to potentially suitable habitat and designated critical habitat. For this reason, construction activities (i.e., reclaimed water pipeline and transmission line installation) within the areas of Segment 1 located in proximity to riparian vegetation communities within the Mojave River would be conducted outside the nesting season of this species. Additionally, biological monitors familiar with this species would be present during construction of this area of the Project site to further ensure that no impacts to this species or its habitat result from Project activities.

Prairie Falcon

The prairie falcon (*Falco mexicanus*) is designated a CSC by the CDFG, afforded protection under California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800, as well as by the MBTA. This member of Falconidae (Caracaras and Falcon family) typically nest on cliffs that provide ample nesting niches (e.g., holes, cracks, ledges, rock shelters) and forage widely over varied habitats. Prairie falcons predate mammals, especially ground squirrels and rabbits, and ground-dwelling birds such as California quails and chukars. During the winter, horned larks and western meadowlarks are also significant source of prey for this species.

Several prairie falcons were observed throughout various areas of the Project site during the biological field work (see Appendix 1, Map 8). This species has also been documented nesting in the vicinity of the Project site (CNDDB 2003). Although known to nest in the mountains in the general vicinity, nesting habitat (i.e., cliffs) is not present on the site; therefore, nesting prairie falcons are considered absent from the site. The prairie falcon occurs on site for foraging purposes during migration and especially during winter.

Bald Eagle

The bald eagle is currently listed as endangered by the CDFG and threatened by the USFWS. In 1999, the USFWS was petitioned to delist the species; the petition asserted that recovery efforts had been successful, and therefore the species no longer warranted the federally-threatened status. The USFWS has not ruled on the matter, but it has extended the comment period for this proposed delisting until June 19, 2007. At this time, the bald eagle remains a state and federally-listed species. The bald eagle is also afforded protection under the Bald and Golden Eagle Protection Act of 1940, as amended, the MBTA and under California Fish and Game Code (sections 3503, 3503.5, 3513, and 3800). This large bird (approximately 1 m (3 ft.) in height; 2.3 m (7 ft.) wingspan) is designated the National Bird of the U.S.

Bald eagles are distinctive as adults, having an entirely white head and tail, dark brown body, and a large yellow curved beak. Juveniles lack the solid white head, and have blotches of white on the underside of the wings and tail. This large, distinctive member of the Accipitridae (Hawk family) is both a bird of prey and a scavenger, primarily eating fish, but also feeding on small mammals, waterfowl, wading birds, and carrion.

A single bald eagle was observed flying over a portion of Segment 1 of the electrical transmission line corridor on one occasion. The Mojave River is a well known migratory route for many migratory bird species, including bald eagles. Bald eagles generally migrate to southern California from their northern breeding range to winter around bodies of permanent water (e.g., Silverwood Lake, Big Bear Lake, Lake Arrowhead, Lake Matthews, Lake Hemet, Lake Skinner, etc.). This individual was likely migrating north for the breeding season. Nesting habitat for bald eagles is not present on the Project site.

Yellow-breasted Chat

The yellow-breasted chat (*Icteria virens*) is designated a CSC by the CDFG and protected under the MBTA and Fish and Game Code Section 3513. This large (6.5 in. length) member of the Parulidae (Wood Warbler family) exhibits a yellow throat and breast, olive green back and wings, and white “spectacle” markings around the eye, all of which make this species distinctive from other species within its range. The yellow-breasted chat is a Neotropical migrant that primarily eats insects, and to a lesser extent, fruit. This species resides in densely vegetated thickets, and is most commonly associated with riparian vegetation communities in southern California. The yellow-breasted chat is declining due to habitat loss, primarily from deforestation and urban development, and is somewhat vulnerable to brood parasitism from brown-headed cowbirds.

The yellow-breasted chat nests fairly commonly along the Mojave River from Victorville to Helendale (as many as 25 nesting pairs, S. Myers pers. comm.). Suitable habitat exists in the riparian habitat within the Mojave River adjacent to the Project site, however not on the site. For this reason, nesting yellow-breasted chat is considered to be absent from the site.

Loggerhead Shrike

The loggerhead shrike (*Lanius ludovicianus*) is managed as a CSC by the CDFG, a “Bird of Conservation Concern” (BCC) by USFWS, protected under the MBTA and Fish and Game Code Section 3513. This passerine (perching bird) member of the Laniidae (Shrike family) is a highly voracious predator on insects and small vertebrates (e.g., reptiles, birds, and mammals). It nests in trees and shrubs throughout most of the U.S. and portions of southern Canada. This species has declined throughout much of its range, particularly in Canada, as well as the Gulf States and Midwest, where a variety of factors including habitat loss and pesticide use have impacted this species. Creosote bush scrub and Joshua tree woodland plant communities are favored by the species within the western Mojave Desert. This species is also known to occasionally nest in Joshua trees. Populations occupying inland southern California, currently appear to be relatively stable despite ongoing losses of natural habitats.

The loggerhead shrike was observed on the Project site by AMEC biologists on several occasions throughout the spring and summer months. Because the species appears to be resident on the Project site and because it is known to nest in Joshua trees which are distributed throughout the site, it is likely that the loggerhead shrike nests on the site.

Osprey

The osprey (*Pandion haliaetus*) is designated a CSC by the CDFG. This species is also afforded protection under California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800 and by the MBTA. This large (56 cm [22 in.] in length) member of the Accipitridae (Hawk family) has a wingspan of 1.37 m. (54 in.). Ospreys primarily eat fish and build large stick nests in trees and on high cliffs or on top of large rock outcrops.

Ospreys were observed flying over the Mojave River and adjacent VVWRA facility on several occasions during the field work. In the Victor Valley area this species is a fairly common

migrant and is uncommon during winter. The site, however, does not afford any nesting or foraging opportunities for this primarily fish-eating species.

Nuttall's Woodpecker

Nuttall's woodpecker (*Picoides nuttallii*) is not listed or designated as a species of concern by the CDFG or USFWS. This species is, however, included CDFG Special Animals list, on the USBC and Audubon "Watch Lists," on the ABC "Green List," and protected under the MBTA and Fish and Game Code Section 3513. In the northern parts of their range, this member of the Picidae (Woodpecker family) is most abundant in oak woodlands, however in southern California, it occurs in both oak habitats and streamside deciduous woodlands dominated by willows and/or cottonwoods. Along the Mojave River, it is the most common of the five woodpecker species known to nest in the area (S. Myers pers. comm.)

Nuttall's woodpecker was detected several times on or adjacent to areas of Segment 1 in proximity to the Mojave River, and is common in the riparian habitat located in the river. Although this species likely nests within the adjacent riparian habitat in the riverbed nesting Nuttall's woodpeckers are considered to be absent from the Project site.

Rufous Hummingbird

The Rufous hummingbird (*Selasphorus rufus*) is not listed as endangered or threatened by either the CDFG or USFWS, nor is it designated as a CSC by the CDFG. It is however included on the CDFG Special Animals list, managed as a sensitive species by the U.S. Forest Service, included on the USBC and Audubon "Watch Lists", ABC "Green List" and protected under the MBTA and Fish and Game Code Section 3513. In southern California, this member of the Trochilidae (Hummingbird family) is a migrant; it breeds from extreme northwestern California north to Alaska, and winters in Mexico.

Although this species was observed in open desert scrub during Mohave ground squirrel trapping and is a common migrant in both spring and fall, rufous hummingbirds do not nest in southern California.

Brewer's Sparrow

Brewer's sparrow (*Spizella breweri*) is a small sparrow that breeds primarily in the Great Basin. This member of the Emberizidae (Emberizine family) also breeds locally in sagebrush habitats in the San Bernardino Mountains and in the mountain ranges of the eastern Mojave Desert. This species has no special status designation by USFWS or CDFG, however is included on the CDFG Special Animals list, on the USBC and Audubon "Watch Lists", ABC "Green List", afforded protection under the MBTA and Fish and Game Code (Section 3513).

Brewer's sparrow was observed on the Project site often during the months of February, March, and April. It is a migrant and/or winter visitor only, as the species is only breeds in the mountains.

Chipping Sparrow

Also a member of the Emberizidae, the chipping sparrow (*Spizella passerina*) is a common breeding species of southern California's mountains. In the Mojave Desert, it is a common migrant and uncommon winter visitor. This species is included on the CDFG Special Animals list, however it has no CDFG or USFWS designations. Nevertheless, the chipping sparrow is protected under the MBTA and Fish and Game Code Section 3513.

The chipping sparrow was observed on the Project site, and winter visitors and migrants are especially common near the Mojave River. Nesting habitat for this species is not present on the Project site.

Summer Tanager

The summer tanager (*Piranga rubra*) is designated a CSC by the CDFG and protected by the MBTA and Fish and Game Code Section 3513. This small (16.5 cm [6.5 in.] in length), colorful passerine belonging to the Thraupidae (Tanager family) generally inhabits riparian vegetation communities in the southwestern U.S. In the eastern U.S., it is more associated with open woodlands of mixed oak and other hardwood trees. Summer tanagers typically perch on the highest treetops and eat primarily flying insects, which it catches on the wing, and to a lesser extent fruit. The Mojave River provides extensive nesting habitat for this species, and in California its summer tanager population is exceeded only by that of the South Fork Kern River.

The summer tanager was not observed on the Project site. Although the riparian habitat within the adjacent Mojave River is suitable for this species, the onsite habitat is not.

White-faced Ibis

The white-faced ibis (*Plegadis chihi*) is managed as a CSC by the CDFG as well as afforded protection by the MBTA and Fish and Game Code Section 3513. This member of the Threskiornithidae (Ibis family) is an uncommon summer resident in sections of southern California, however more common and widespread during migration. This species generally forages in fresh emergent wetland, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. White-faced ibis nest in densely-vegetated, emergent freshwater wetlands. This species has declined in California and ceased nesting regularly in areas where it once formerly bred, a likely result of destruction of extensive marshes in the state (CDFG 2005).

White-faced ibis was not observed on, or in the vicinity of the site during any of the biological field surveys conducted for this Project. This species was, however, reported occurring along the Mojave River in at least one location during other biological field surveys conducted for the SCLA Specific Plan Amendment and Rail Service Project EIR (Tom Dodson Associates 2003).

Requisite dense freshwater emergent vegetation habitat for this species, although potentially present within the Mojave River in the vicinity of the site, is not present on the Project site. For this reason the white-faced ibis is considered to be absent from the Project site.

California Thrasher

The California thrasher (*Toxostoma redivivum*) is included on CDFG Special Animals list, on the USBC and Audubon "Watch Lists," on the ABC "Green List," and protected by the MBTA and Fish and Game Code Section 3513. This member of the Mimidae (Mockingbird and Thrasher family) is nearly endemic to California, however also occurs in extreme northern Baja California. It is primarily a bird of chaparral and sage scrub habitats, but also occurs in riparian scrub. In the Mojave Desert, it occurs along the Mojave River as far downstream as Helendale.

The California thrasher was observed in the larger washes that bisect portions of Segment 1 of the Project's electrical transmission line. Nesting is probably confined to the nearby Mojave River bed.

Le Conte's Thrasher

The Le Conte's thrasher (*Toxostoma lecontei*) is designated a CSC by the CDFG and protected by the MBTA and Fish and Game Code Section 3513. This medium sized, non-migratory member of the Mimidae is endemic to four southwestern states and northwestern Mexico. Although widespread, this species is an uncommon to rare resident of desert scrub habitats. Within the West Mojave Desert, the species occurs in the Antelope Valley north to eastern Kern County, including California City, and Ridgecrest. In the southern portion of the West Mojave Desert, the species occurs throughout Joshua Tree National Park and west along the northern bases of the San Bernardino and San Gabriel Mountains. Open desert with scattered shrubs and sandy and/or alkaline soil are preferred by the Le Conte's thrasher. Creosote bush scrub and Joshua tree woodland vegetation communities are favored by this species within the western Mojave Desert. The nests are typically placed in a cactus, thorny shrub, or small tree, selected to offer protection from predators and the sun.

At least two Le Conte's thrashers were observed in two locations along Segment 1 of the electrical transmission line during biological surveys (see Appendix 1, Map 8). Additionally, suitable nesting habitat is present throughout much of the site. This species was also reported in the immediate vicinity of the site, possibly on the site, during biological field survey work for the SCLA Specific Plan Amendment and Rail Service Project EIR (Tom Dodson & Associates 2003).

Least Bell's Vireo

The least Bell's vireo (*Vireo bellii pusillus*) is listed as endangered by the CDFG and by the USFWS. The least Bell's vireo is a small, migratory, insectivorous bird species that occurs in willow-dominated riparian habitats. Although this species is drab in plumage and can be secretive within its densely vegetated habitat, males are easy to detect on the breeding grounds due to their conspicuous and diagnostic song. Nesting habitat of this member of the Vireonidae (Vireo family) is restricted to willow and/or mulefat dominated riparian scrub along permanent or nearly permanent streams (Grinnell and Miller 1944, Goldwasser 1978, Franzreb 1987, Garrett and Dunn 1981). Least Bell's vireos were formerly widespread and common throughout low-lying riparian habitats of central and southern California, but are now restricted to a limited number of locations in southern California. Habitat reduction has contributed to this species' significant population declines. Nest parasitism by brown-headed cowbirds has also seriously

impacted reproductive success by least Bell's vireo, as well as many other species which build cup nests (Goldwasser 1978). The USFWS designated critical habitat for this species on February 2, 1994. The nearest designated critical habitat for the least Bell's vireo is located approximately 26 miles south of the Project site.

This species was not observed on the Project site, nor is it expected to occur. Suitable nesting habitat, although potentially present within the adjacent Mojave River riparian vegetation, is not present on the site. Therefore, this species is considered to be absent from the site. Potential indirect impacts to this species as a result of Project activities (i.e., loud noise, operation of heavy equipment, etc.) conducted during the nesting season (generally 15 Feb. through 31 Aug.) are possible, however, due to the proximity of portions of Segment 1 to potentially suitable habitat. For this reason, construction activities (i.e., reclaimed water pipeline installation) within the areas of Segment 1 located in proximity to riparian vegetation communities within the Mojave River would be conducted outside the nesting season of this species. Additionally, biological monitors familiar with this species would be present during construction of this area of the Project site to further ensure that no impacts to this species or its habitat result from Project activities.

Gray Vireo

Gray vireo (*Vireo vicinior*) is not state or federally listed; however it is designated as a CSC by the CDFG and afforded protection by Fish and Game Code Section. This member of the Vireonidae (Vireo family) is an uncommon, local, summer resident in arid pinyon-juniper, juniper, and chamise-redshank chaparral vegetation communities from 600-2000 m (2000-6500 ft) in mountains of the eastern Mojave desert, on northeastern slopes of the San Bernardino Mts., as well as the San Jacinto Mountains and the southern slopes of the Laguna Mountains.

The gray vireo was not observed on the Project site during the biological surveys. Focused surveys for this species, however, were not conducted for this species. There is a low potential for this species to nest in the juniper scrub habitat along the southern approximate ½ of Segment 3 of the Project transmission line corridor.

6.6.4 Special-Status Mammals

Three sensitive mammal species are known to occur in the vicinity of the Project site. These include the Mohave ground squirrel (*Spermophilus mohavensis*), Mohave river vole (*Microtus californicus mohavensis*), and pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*). Each of these species and their potential to occur within the Project site and vicinity are presented in Table 8 and discussed separately below.

Mohave Ground Squirrel

The Mohave ground squirrel is restricted to the western Mojave Desert, and occurred historically from near Palmdale on the southwest, southeast to Lucerne Valley, northwest to Olancho, and northeast to the Avawatz Mountains (Gustafson 1993). There are a few recent records of the species in the southern portion of its range (Palmdale to Victorville area), including a juvenile captured in the Victorville area during July 2005. Urbanization and other impacts to its desert

habitats have led to its (probable) near extirpation from this area. The Mohave ground squirrel is about nine inches long, and is pale brown dorsally, with cream colored underparts. It lacks obvious stripes or spots. It is active only seasonally, spending much of the year in torpidity underground, emerging to feed following winter and spring rains. It feeds on the leaves and seeds of forbs and shrubs, with perennial shrubs forming a large part of the diet, especially when annual forbs are not available. Habitats used by this species include creosote bush scrub, various types of saltbush scrub, and Joshua tree woodland. The

Table 8. Special Status Mammals

Species	Protective Designation F=Federal, C= California	Habitat	Occurrence Probability
Mohave ground squirrel (<i>Spermophilus mohavensis</i>)	F: none C: threatened	creosote bush scrub, saltbush scrub; restricted to a small portion of the Mojave Desert	Presumed Present throughout the site (focused visual and trapping surveys negative for specific areas); results good until 15 July 2007. Other areas (portions of Segment 1 and Segments 2 & 3) not trapped.
Mohave River vole (<i>Microtus californicus mohavensis</i>)	F: none C: special concern	damp bottomland of the Mojave River, including riparian forest and freshwater marsh	Very Low (habitat marginal); more likely in adjacent Mojave River
pallid San Diego pocket mouse (<i>Chaetodipus fallax pallidus</i>)	F: none C: special concern	sandy herbaceous areas of desert borders, washes, desert scrub, pinyon-juniper woodlands; usually in association with rocks or coarse gravel	Unknown (Natural history and distribution of taxon poorly known; comprehensive mammal trapping not conducted)

topography throughout its range is primarily flat, but the squirrel can also occur on gentle to moderate slopes, especially in the northern portion of its range. Since 1971, the Mohave ground squirrel has been on the State of California's Threatened Species list. Loss and degradation of habitat is the primary reason this species is threatened; it is especially sensitive to adverse impacts to its habitats since it appears to have been patchily distributed, even in historic times.

Almost the entire Project site provides suitable habitat for the Mohave ground squirrel. A sighting in 1987 (CNDDDB data) was from on or near the proposed southern laydown/staging area. Two visual sightings of this species were reported in 2003 from the vicinity, perhaps even on the overlapping Project site, by biologists conducting surveys for the SCLA Specific Plan Amendment and Rail Service Project (Tom Dodson Associates 2004). The boundaries of the SCLA Specific Plan Amendment and Rail Service Project overlap with the boundaries of portions of this Project (i.e., power plant site, staging areas, water supply and sanitary wastewater pipelines and Segment 1 of the Project transmission line route). The exact locations of these 2003 sightings were not provided. More recently, the species was captured in 2004 from a site along U.S. Highway 395, approximately two miles west-southwest of the Project site (S. Montgomery pers. comm.; T. Moore pers. comm.). The CNDDDB (2006) provides additional locality records for this species in proximity to Segments 2 and 3 as well (see Appendix 1, Map 4).

No Mohave ground squirrels were captured or observed on the VV2 Project site during the focused surveys conducted in 2006. It should be noted, however, that only the power plant site, the two adjacent construction staging areas, and a portion of Segment 1 were trapped for this species. The remainder of Segment 1, as well as Segments 2 and 3 were not surveyed or trapped. As noted earlier, the Project proponent has elected to assume presence of the Mohave ground squirrel on the Project site and will consult with CDFG for Project impacts to this species.

Mohave River Vole

The Mohave River vole (also known as Mohave River meadow mouse) is a subspecies of the widespread California Vole. This subspecies is restricted in range to the Mojave River between Victorville/Apple Valley and Helendale. California voles have also been documented at other moist areas in the western Mojave Desert, including Harper Dry Lake and Edwards Air Force Base. These additional populations may also be of this subspecies, but conclusive evidence of this is lacking. The habitat of the Mohave River vole is moist, grassy understory of riparian woodlands, freshwater marsh, meadows, and irrigated pastures. The Mohave River vole is a CDFG species of special concern.

There is a very low potential for the occurrence of the Mohave River vole on very limited areas of the Project site. During flooding of the adjacent Mojave River some individuals may seek refuge in the site's upland habitats.

Pallid San Diego Pocket Mouse

Little is known of the natural history of the pallid San Diego pocket mouse, a CDFG species of special concern. This species is associated with open, sandy, weedy area of the low desert and foothills in the Lower and Upper Sonoran life zone of southwestern California (Ingles 1965). This subspecies occurs primarily on the margins of the western Mojave Desert and the northern slopes of the San Bernardino and San Gabriel mountains. A record for Oro Grande appears in the literature (Hall 1981, CNDDDB data), indicating that the subspecies also occurs, or occurred, in desert scrub or riparian habitats in this area.

Due to the general lack of available information for this species, it is not known whether this taxon potentially occurs on the Project site. Comprehensive nocturnal trapping surveys were not performed for this Project.

6.6.5 Special Status Invertebrates

Two special-status invertebrate species are known to occur in the vicinity of the Project site. These include the Victorville shoulderband (*Helminthoglypta mohaveana*) and San Emigdio blue butterfly (*Plebulina emigdionis*). Each of these species and their potential to occur with in the Project site and vicinity are presented in Table 9 and discussed separately below.

Table 9. Special Status Insects

Species	Protective Status [F=Federal; C=California]	Habitat	Occurrence Probability
Victorville shoulderband (<i>Helminthoglypta mohaveana</i>)	F: none C: none Other: CNDDB ranking: G1S1	granite rocky outcrops, base of rocky cliffs along Mojave River	Absent (rocky outcrops lacking)
San Emigdio blue (<i>Plebulina emigdionis</i>)	F: none C: none Other: CNDDB ranking: G2G3S2S3	desert canyons and along riverbeds, known from Mojave River in vic. of Victorville	Moderate (onsite habitat limited)

Victorville Shoulderband

The Victorville shoulderband (*Helminthoglypta mohaveana*) is a little known desert land snail that is associated with rocky outcrops (T. Thomas pers. com). The species is known only from the Mojave River in San Bernardino County, California. This species is not listed as endangered or threatened, or designated as otherwise sensitive by either the CDFG or USFWS. It is, however included on the CDFG Special Animals List, as it has been assigned a G1S1 status by the CNDDB (See Key to Tables on page 118).

The Victorville shoulderband was not observed on the Project site during the surveys. Although focused surveys were not specifically conducted for this species, the few rocks that were found within the ZOI of Segment 1 were turned in an attempt to find this species. The Victorville shoulderband has been reported from T6N, R5W, S13, a section that a portion of the Project's electrical transmission line route also occupies. The description of this record is "west bank of the Mojave River above Oro Grande, found in a rocky outcrop." The Project site, however, lacks rocky outcrops. For this reason, the Victorville shoulderband is considered to be absent from the site.

San Emigdio Blue

The San Emigdio blue (butterfly) (*Plebulina emigdionis*) is not listed as endangered, threatened, or as a species of concern by any of the state or federal regulatory agencies. This species is however has been given a ranking of G2G3S2S3 by the CNDDDB (See Key to Tables on page 118). The San Emigdio blue is associated with desert canyons and riverbeds in the southernmost San Joaquin Valley and along the Mojave River in the vicinity of Victorville. The larval host plant for this species is four-winged saltbush and possibly Spanish Clover (*Lotus purshianus*). Caterpillars eat the saltbush leaves and are tended by ants. Wild Heliotrope (*Heliotropium curassavicum*) is a known nectar plant (S. Myers pers. comm.).

San Emigdio blues have been observed in the Mojave River bed less than one mile northeast of the Project site (S. Myers pers. comm.). Several of the onsite dry washes and areas supporting Saltbush Scrub communities may provide suitable habitat for this species, as four-winged saltbush was present in these areas. AMEC considers there to be a moderate potential of occurrence onsite for this species.

7.0 PROJECT EFFECT/IMPACT ANALYSIS

7.1 Thresholds of Significance

Impacts or effects to biological resources have been assessed in accordance with CEQA. These impacts/effects have also been reviewed to ensure consistency with applicable regional resource protection plans and ordinances. The proposed Project would have varying impacts on biological resources. This determination has been made in reference to thresholds established per the following regulatory authorities:

- Federal Endangered Species Act (ESA), administered by the U.S. Fish and Wildlife Service (USFWS);
- California Endangered Species Act (CESA), administered by the California Department of Fish and Game (CDFG);
- Section 404 of the Clean Water Act (CWA), administered by the Army Corps of Engineers (USACE);
- Section 401 of the CWA, administered by the Lahonton Regional Water Quality Control Board (LRWQCB); and
- Section 1600 of the California Fish and Game Code administered by the CDFG; and
- The West Mojave Plan Amendment (WMPA) to the California Desert Conservation Area Plan (CDCAP), administered by the U.S. Bureau of Land Management (BLM).

These anticipated impacts to biological resources would necessitate appropriate agency consultation, pertinent regulatory permitting and the application of site-specific mitigation measures, in order to:

- Minimize the incidental “take” of species listed as “threatened” or “endangered” pursuant to the ESA. Projects that incorporate the terms and conditions of a Section 7 Biological Opinion are typically considered mitigated to a level below the threshold of significance.
- Minimize the incidental “take” of a species listed as “threatened” or “endangered” pursuant to the CESA. Projects that implement suitable mitigation measures to support issuance of a CESA Section 2081 incidental take permit are typically considered to be mitigated to a level that is below the threshold of significance.
- Minimize adverse effects upon plants and animals designated by the State of California as “Protected,” or those designated as “Species of Special Concern.”
- Avoid, minimize or mitigate any impact to the bed or bank of any river, ephemeral/perennial stream, or lake within California; or any alteration of natural water flow. Projects that incorporate adequate mitigation measures to support issuance of a California Streambed Alteration Agreement by the CDFG are typically considered to be mitigated to a level that is below the threshold of significance.
- Avoid, minimize or mitigate any dredging or discharge of fill material into Waters of the United States, pursuant to Section 404 of the Clean Water Act. Projects that fully mitigate impacts to wetland functions and values sufficient to support issuance of a nationwide programmatic or individual permit; or which would result in less than a 0.10 acre impact, are typically considered to be mitigated to a level that is below the threshold of significance.
- Avoid, minimize or mitigate any effect to water quality within the Lahonton Region of California, pursuant to Section 401 of the Clean Water Act. Projects that fully mitigate impacts to established water quality standards sufficient to support issuance of a Water Quality Certification, are typically considered to be mitigated to a level that is below the threshold of significance.
- Reduce disruption effects to native resident or migratory wildlife movement corridors to ensure known populations are not substantially reduced. Projects that implement mitigation measures designed to conserve or create alternative wildlife corridors are typically considered to be mitigated to a level that is below the threshold of significance.
- Reduce adverse effects upon sensitive or locally rare plant communities (e.g., riparian plant communities, Joshua tree woodlands, oak woodlands, etc.) identified in local or regional plans, policies, or regulations or by the USFWS and/or CDFG.
- Avoid conflicts with the objectives or goals of a regionally-adopted HCP, Natural Community Conservation Plan or Federal Land Management Plan.

Anticipated direct, indirect, and cumulative impacts of the Project have been analyzed to determine their degree of “significance.” These impacts have been assessed individually as well as collectively with respect to the Project.

The anticipated incidental “take” of listed and other special status species has been quantified with respect to the Proposed Action, where possible. The significance of impacts to individual species has been premised on the rarity of the species or its habitat and the extent of anticipated impact.

All listed species impacts are considered significant. A determination of significance for other special status species is based on overall species distribution (e.g., impacts to regional core populations), regional and range-wide rarity of the affected species, and conservation afforded the species and its habitat in regional plans.

Affected habitats supporting state or federally listed species, as well as other special status species, are also considered significant resources. Habitat impacts have been quantified on a per-acre basis relative to the affected plant community occurring within impact zones of the Project Area. Mitigation measures specific to the Proposed Action have been designed to address anticipated impacts to both species and habitats.

7.2 Impact Definition

7.2.1 Direct Impacts

Direct impacts are effects to natural resources supporting biological systems caused by a project action which occur at the same time and place as initial construction or operation activities. Examples of direct impacts include any action resulting in the loss or alteration of a native plant community or wildlife habitat component; those actions resulting in the injury/mortality of any wildlife species; or those which cause aberrant animal behavior. Such impacts also include the excavation and removal of native soils during construction or operations from a jurisdictional water or state streambed; the placement of fill material within a jurisdictional water/state streambed during construction or operations; or effects to surface and/or subsurface water quality during construction or project operations.

7.2.2 Indirect Impacts

Indirect impacts are those effects to natural resources supporting biological systems caused by a project action which occur later in time than initial construction/operation actions or those that are removed in distance from the immediate project site. Indirect impacts may include activities that alter adjacent offsite natural resources, including habitat used by listed or special status species. Examples of indirect impacts include, but are not limited to, elevated noise levels from construction or operational activities and night lighting. Such impacts also include alteration of surface water elevations, changes of floodplain flow patterns, fugitive dust generation, increased erosion or sedimentation, runoff of hazardous chemicals or waste, aerial drift of herbicides/pesticides into waters or soils, and/or introduction of non-native species.

7.2.3 Cumulative Impacts

Cumulative impacts are defined as the incremental impacts of a proposed project on the environment considered in the context of other past, present and foreseeable future actions, regardless of what entity undertakes these actions. Cumulative impacts may result from



individually minor, but collectively significant actions taking place over a period of time. A project's action is considered less than cumulatively significant if:

- The project is required to implement an appropriate share of a mitigation measure intended to alleviate the cumulative impact; or if:
- The project's contribution to a significant cumulative impact is essentially "de minimis," or so miniscule that the regional conditions would remain unchanged whether or not the project was implemented.

7.2.4 Temporary versus Long Term Impacts

Long term and permanent impacts are those actions that result in irreversible damage to, or loss of, natural resources associated with biological systems. Long term impacts are defined as those actions that result in the inability to recover or restore an area to a natural state within a period of three years.

Examples of long term/permanent impacts include site grading for construction, as well as surface disturbance associated with equipment staging areas, large vehicle parking and equipment unloading zones, pipeline trench excavation and new access road installation.

Temporary impacts are considered to be those changes in the local environment that do not extend substantially beyond the term of initial project work completion. Examples of temporary impacts include minor damage to vegetation which does not result in the removal of perennial shrub crowns or tree removal, cross-country vehicle travel over undisturbed terrain, assembly or placement of project structures or equipment on undisturbed areas.

7.3 VV2 Project Implementation

7.3.1 Direct Permanent or Long-term Surface Disturbance Impacts

Implementation of the entire proposed Project would result in the excavation and removal of native soils and the permanent loss of native vegetation on approximately 342 acres of land known to be occupied, presumed to be occupied, and/or known to be suitable habitat for a variety of special-status species including the desert tortoise, Mojave ground squirrel, burrowing owl, Le Conte's thrasher, etc. The loss of these vegetation communities is a direct, permanent impact. The remaining 57 acres is disturbed/developed or non-native grassland that does not provide habitat for special status species. The amount of each vegetation community that will be directly impacted within each project area is depicted in Table 10 and discussed in detail, separately below.

Table 10. Permanent Direct Surface Disturbance Acreage per Affected Plant Community

Vegetation	Power	West	South	Linear Utility Feature	TOTAL
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Community	Plant Site	Staging Area	Staging Area	Segments			
				1	2	3	
Mojave creosote bush scrub	285 acres	30 acres	20 acres	6.7 acres	0.13 acres	0.13 acres	341.96 acres
desert saltbush scrub	0 acres	0 acres	0 acres	<0.01 acres	0 acres	0 acres	<0.01 acres
Mojavean juniper woodland	0 acres	0 acres	0 acres	0 acres	0 acres	0.17 acres	0.17 acres
non-native grassland	3 acres	0 acres	0 acres	0 acres	0 acres	0 acres	3 acres
rabbitbrush scrub	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres
disturbed/developed areas	50 acres	0 acres	0 acres	3.6 acres	0 acres	0 acres	53.6 acres
Total	338 acres	30 acres	20 acres	10.31 acres	0.13 acres	0.3 acres	398.74 acres

Power Plant Site

Earth-moving activities within the immediate footprint of the proposed power plant site would result in the excavation and removal of topography and topsoil on approximately 338 acres of land that currently supports 285 acres of Mojave creosote bush scrub, three acres of non-native grassland, and 50 acres of disturbed/developed areas. Mojave creosote bush scrub is a native vegetation community that provides suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, and Le Conte's thrasher as well as several special status plant species and nesting birds. The remaining 53 acres are currently either developed/disturbed or vegetated with non-native grassland that offers little habitat value for most these species; the exception being ground nesting bird species. Additionally, two live desert tortoises and burrowing owl sign were observed within the proposed power plant site. The Mohave ground squirrel is assumed to be present within the suitable habitat (285 acres) on this area of the site. Thus, direct impacts would occur to the desert tortoise, Mohave ground squirrel, nesting birds and possibly the burrowing owl and potentially occurring special status plants from loss of habitat and/or injury/mortality of individuals.

Direct impacts to the desert tortoise, Mohave ground squirrel, burrowing owl, and nesting bird species would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal ESA Section 7 consultation with the USFWS and receipt of a Project BO (for the desert tortoise), obtaining from CDFG a CESA Section 2080.1 concurrence with the federal Project BO (for desert tortoise) and a CESA Section 2081 incidental take permit (for the Mohave ground squirrel), offsite habitat compensation and species specific impact minimization measures for all species impacted. A detailed discussion of these mitigation measures is provided in Section 8.0.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower) are not likely due to the very limited amount of marginally-suitable habitat present for these species

within this Project feature. This area of the site lacks washes, drainages and extensively sandy or gravelly soils. Direct impacts to these species (if any) would be reduced to a less than significant level by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout all potentially-suitable areas of the site during the appropriate survey period during an adequate rainfall year (2007-2008) prior to project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Construction Staging Areas

Earth-moving activities within the immediate footprint of the proposed construction staging areas would result in the excavation and removal of topography and topsoil on approximately 50 acres of land supporting Mojave creosote bush scrub. These activities would result in the long term loss of this vegetation community which provides suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, Le Conte's thrasher, nesting bird species and possibly several special status plant species. Desert tortoise sign, potentially suitable habitat for Mohave ground squirrel, and suitable burrowing owl burrows were observed within the southern construction staging during focused field surveys. Thus, direct impacts would occur to the desert tortoise, Mohave ground squirrel potentially suitable habitat, nesting birds and possibly the owl and potentially occurring special status plants from loss of habitat and/or injury/mortality of individuals.

Direct impacts to desert tortoise, Mohave ground squirrel potentially suitable habitat, nesting birds and possibly the burrowing owl would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence with the Project BO and a CESA Section 2081 incidental take permit, offsite habitat compensation and species specific impact minimization measures for all species impacted. A detailed discussion of these mitigation measures are provided in Section 8.0.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower) are not likely due to the very limited amount of marginally-suitable habitat present for these species within this Project feature. These areas of the site lack washes, drainages and extensively sandy or gravelly soils. Nevertheless, significant direct impacts to these species (if any) would be mitigated to less than significant by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout potentially-suitable areas of the site prior to start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these

surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Segment 1

Earth-moving activities within the immediate footprint of the combined linear features within Segment 1 would result in the excavation and removal of topography and topsoil on approximately ten acres of land supporting Mojave creosote bush scrub (7 acres), desert saltbush scrub (less than 0.1 acre), and four acres of disturbed/developed areas. Specific impacts due to each of the project features within Segment 1 are detailed separately below:

Electrical Transmission Line

Approximately 3 acres of natural topography and associated topsoil would be permanently removed as a result of construction of the electrical transmission lines within Segment 1. This would include the loss of approximately 3 acres of Mojave creosote bush scrub and 100 sq. ft. of desert saltbush scrub. The Mojave creosote bush scrub and desert saltbush scrub are vegetation communities that can provide suitable habitat for the desert tortoise, Mohave ground squirrel, Le Conte's thrasher, and San Emigdio blue butterfly. Desert tortoise and burrowing owl sign (i.e., burrows, scat, carcasses, whitewash) were observed within the ROW of the electrical transmission line within Segment 1. Additionally, live desert tortoises and live burrowing owls were observed within the respective ZOI and 500-foot buffer zone areas for these species. Thus, direct impacts would occur to the desert tortoise, Mohave ground squirrel potentially suitable habitat, nesting birds, and possibly the burrowing owl and San Emigdio blue butterfly as a result of the loss of habitat and/or injury/mortality of individuals.

Direct impacts to the desert tortoise, Mohave ground squirrel potentially suitable habitat, burrowing owl, and nesting bird species would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence and a 2081 incidental take permit, offsite habitat compensation and species specific impact minimization measures. A detailed discussion of these mitigation measures are provided in Section 8.0.

Direct impacts to the potentially occurring San Emigdio blue butterfly are not considered significant due to the very limited amount (less than 100.5 sq. ft.) of potentially suitable desert saltbush scrub habitat that would be permanently impacted by the two transmission line towers that are proposed to be placed in this vegetation community. The Project has been designed to avoid all washes that may also provide potentially-suitable habitat for this species. This resulting approximate 100 sq. ft. potential impact to potentially suitable habitat for this species is considered to be negligible and less than significant.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower) are not likely due to the limited amount of marginally-suitable habitat present for these species within this Project feature. The sandiest and gravelliest of soils present within this area of the Project site are located within the washes and drainages. The Project has been designed to

avoid all impacts to the onsite washes and drainages. Direct impacts to these species (if any) would be reduced to a less than significant level by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout potentially-suitable areas of the site prior to the start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Additionally, 40 ephemeral washes determined to be jurisdictional waters have the potential to be directly impacted by surface disturbing activities associated with construction of the electrical transmission lines and access roads along Segment 1. Direct impacts to these areas would be considered significant if not avoided or mitigated. The Project, however, is currently designed to avoid direct impacts to these areas. However, if it is determined later that direct impacts cannot be avoided, mitigation measures would be implemented to reduce these impacts to a less than significant level. A detailed description of these mitigation measures is provided in Section 8.1.12.

Reclaimed Water Pipeline

Direct impacts to approximately 2.5 acres of topography and soils, as well as long-term loss of Mojave creosote bush scrub, would result from construction and installation of the reclaimed water pipeline. The remaining 2.5 acres of this Project feature are currently developed or disturbed by the VVWRA facility and thus do not provide suitable habitat for the desert tortoise or Mohave ground squirrel. Mojave creosote bush scrub provides suitable habitat for the desert tortoise, Mohave ground squirrel, Le Conte's thrasher, burrowing owl, nesting birds, and the potentially-occurring special status plant species. Desert tortoise and burrowing owl sign (i.e., burrows, scat, carcasses, whitewash) were observed within the ROW of this pipeline within Segment 1. Additionally, live desert tortoises and live burrowing owls were observed within the respective ZOI and 500-foot buffer zone areas of this Project feature for these species. A portion of the developed/disturbed lands along a portion of the pipeline route within the VVWRA treatment facility is located adjacent to treatment ponds that may provide habitat for the southwestern pond turtle.

Direct impacts to the desert tortoise, Mohave ground squirrel potentially suitable habitat, burrowing owl, and Le Conte's thrasher would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence and a CESA Section 2081 incidental take permit, offsite habitat compensation, habitat restoration, and species specific impact minimization measures.

Potential direct impacts to the southwestern pond turtle are not likely due to the location of the project features within existing compacted roadways and thus are not considered significant; however to minimize the potential for impacts for this species construction activities a biological

monitor will be present to oversee ground disturbance activities and will conduct daily clearance surveys during these activities.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower) are not likely due to the very limited amount of marginally-suitable habitat present for these species within this Project feature. Significant direct impacts to these species (if any) would be mitigated to less than significant by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout potentially-suitable areas of the site during the appropriate survey period prior to the start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

A detailed discussion of these minimization measures are provided in Section 8.0 below.

Sanitary Wastewater Pipeline

Direct impacts to approximately 3 acres of topography and soils, as well as long-term loss of Mojave creosote bush scrub, would result from construction and installation of the sanitary wastewater pipeline. The remaining 1 acre of this Project feature is located within a previously disturbed dirt road adjacent to the VVWRA facility and thus does not provide suitable habitat for the desert tortoise or Mohave ground squirrel. Mojave creosote bush scrub provides suitable habitat for the desert tortoise, Mohave ground squirrel, Le Conte's thrasher, burrowing owl, nesting birds, and the potentially-occurring special status plant species. Desert tortoise and burrowing owl sign (i.e., burrows, scat, carcasses, whitewash) were observed within the ROW of this pipeline within Segment 1. Additionally, live desert tortoises and live burrowing owls were observed within the respective ZOI and 500-foot buffer zone areas of this Project feature for these species.

Direct impacts to the desert tortoise, Mohave ground squirrel potentially suitable habitat, burrowing owl, and Le Conte's thrasher would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence and a CESA Section 2081 incidental take permit, offsite habitat compensation and species specific impact minimization measures.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, sagebrush loeflingia, and Mojave monkeyflower) are not likely due to the very limited amount of marginally-suitable habitat present for these species within this Project feature. Significant direct impacts to these species (if any) would be mitigated to less than significant by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species

throughout potentially-suitable areas of the site during the appropriate survey period prior to the start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Additionally, two ephemeral washes, one determined to be a WSC only and the other a WSC and a WUS, have the potential to be directly impacted by surface disturbing activities associated with construction of the sanitary waste water pipeline along Segment 1. Direct impacts (if any) to these areas would be considered significant if not avoided or mitigated. The Project is currently designed to avoid direct surface impacts to these washes by directional boring the pipeline underneath these areas. However, if direct surface impacts can not be avoided, mitigation measures would be implemented to reduce these impacts to a less than significant level.

A detailed discussion of these minimization measures are provided in Section 8.0 below.

Segment 2

Installation of the footings and 300-feet of access roads for the six proposed electrical transmission line poles towers within Segment 2 would require vegetation removal, grading, digging, scraping, and/or blading. These activities will result in the permanent removal of topography and soils on approximately 0.13 acres of land supporting Mojave Creosote Bush Scrub. This vegetation community provides suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, Le Conte's thrasher, nesting birds, and potentially-occurring special status plant species. Additionally, although focused surveys have not been conducted in this area, two live burrowing owls were observed within the 500-foot buffer zone area to portions of this Project feature. Thus, direct impacts to these species would occur due to loss of habitat.

Direct impacts to the desert tortoise, Mohave ground squirrel potentially suitable habitat, burrowing owl, and Le Conte's thrasher would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence and a CESA Section 2081 incidental take permit, offsite habitat compensation and species specific impact minimization measures.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, and sagebrush loeflingia) are not likely due to the very limited amount of marginally-suitable habitat present for these species within this Project feature. Significant direct impacts to these species (if any) would be mitigated to less than significant by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout potentially-suitable areas of the site during the appropriate survey period prior to the start of Project construction;

and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Additionally, ten ephemeral washed determined to be WSC and WUS have the potential to be directly impacted by surface disturbing activities associated with construction of the electrical transmission lines along Segment 2. Direct impacts to these areas would be considered significant if not avoided or mitigated. The Project is currently designed to avoid direct impacts to these areas. However, if direct impacts cannot be avoided, mitigation measures would be implemented to reduce these impacts to a less than significant level.

A detailed discussion of these minimization measures are provided in Section 8.0 below.

Segment 3

Installation of the proposed electrical transmission line poles towers within Segment 3 would require vegetation removal in the location of the tower footings only. These activities would result in the permanent removal of topography and soils on approximately 0.3 acres of land supporting Mojave creosote bush scrub (0.13 acres) and Mojavean juniper woodland and scrub (0.17 acres). No new roads are proposed for Segment 3. These vegetation communities provide suitable habitat for the desert tortoise, Mohave ground squirrel, Le Conte's thrasher, San Diego coast horned lizard, nesting birds and potentially-occurring special status plant species. Direct impacts to these species would occur due to loss of habitat. Direct impacts to these species would be reduced to a less than significant level through implementation of mitigation measures including participating in a federal Section 7 consultation with the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence and a CESA Section 2081 incidental take permit, offsite habitat compensation and species specific impact minimization measures.

Several burrows that are suitable for burrowing owl occupation were observed within Segment 3. Thus, this species has the potential to be directly impacted by Project activities within this area. Focused surveys were not conducted for this species in this area. Therefore direct impacts to this species in this area are possible. Focused surveys for this species would be conducted in accordance with CDFG survey guidelines prior to the start of Project construction to determine if the species is present in the project area. Direct impacts (if any) to the burrowing owl in this area would be reduced to a less than significant level through mitigation measures outlined in Section 8.1.6.

Direct impacts to potentially-occurring special status plant species (i.e., small-flowered androstephium, Booth's evening primrose, and sagebrush loeflingia) are not likely due to the very limited amount of marginally-suitable habitat present for these species within this Project feature. Significant direct impacts to these species (if any) would be mitigated to less than significant by: 1) avoiding impacts to the areas most likely to support these species (i.e., washes

and drainages); 2) conducting focused surveys for these species throughout potentially-suitable areas of the site during the appropriate survey period prior to the start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Additionally, five ephemeral washed determined to be WSC and WUS and have the potential to be directly impacted by surface disturbing activities associated with construction of the electrical transmission lines along Segment 3. Direct impacts to these areas would be considered significant if not avoided or mitigated. The Project is currently designed to avoid direct impacts to these areas. However, if direct impacts cannot be avoided, mitigation measures would be implemented to reduce these impacts to a less than significant level. A detailed description of these mitigation measures is provided in Section 8.1.12.

7.3.2 Direct Temporary Surface Disturbance Impacts

Implementation of the proposed Project would result in approximately 66 acres of direct temporary impacts to natural areas along the electrical transmission line corridor in Segments 1, 2, and 3 due to surface disturbance activities. The amount of each vegetation community that will be temporarily impacted within each project area is depicted in Table 11 and discussed in detail, separately below.

These temporary impacts would occur in tower construction and assembly areas adjacent to each of the proposed new tower sites. These activities would potentially result in the crushing or trampling of vegetation by equipment, vehicles, and personnel. These impacts are discussed separately by segment below.

No temporary surface disturbance impacts are expected to occur on the power plant site, the two construction staging areas, or within the ROWs of the two pipelines, as the impacts associated with these features permanent in nature.

Table 11. Temporary Direct Surface Disturbance Acreage per Affected Plant Community

Vegetation Community	Power Plant Site	West Staging Area	South Staging Area	Linear Utility Feature Segments			TOTAL
				1	2	3	
Mojave creosote bush scrub	0 acres	0 acres	0 acres	9 acres	2.2 acres	31.8 acres	43 acres
desert saltbush scrub	0 acres	0 acres	0 acres	0.2 acres	0 acres	0 acres	0.2 acres
Mojavean juniper woodland	0 acres	0 acres	0 acres	0 acres	0 acres	23.2 acres	23.2 acres
non-native grassland	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres
rabbitbrush scrub	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres
disturbed/developed areas	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres	0 acres
Total	0 acres	0 acres	0 acres	9.2 acres	2.2 acres	55 acres	66.4 acres

Segment 1

Construction of the structures within Segment 1 would temporarily impact approximately nine acres of Mojave creosote bush scrub and 0.2 acres of desert saltbush scrub. As discussed previously, Mojave creosote bush scrub and desert saltbush scrub provide suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, Le Conte's thrasher and nesting birds. Temporary impacts to these vegetation communities would not be considered significant. However, injury/mortality to any of these species as well as the potentially-occurring southwestern pond turtle and San Emigdio blue butterfly and within the proposed impact area would be considered significant if not avoided or mitigated. These impacts would be mitigated to a less than significant level through measures outlined in Section 8.0 below.

Segment 2

Construction of the structures within Segment 2 would temporarily impact approximately two acres of Mojave creosote bush scrub. This vegetation community provides suitable habitat for the desert tortoise, Mohave ground squirrel, burrowing owl, Le Conte's thrasher, and nesting birds. Temporary impacts to this vegetation community would not be considered significant. However, injury/mortality to any of these species as well as the within the proposed impact area would be considered significant if not avoided or mitigated. These impacts would be mitigated to a less than significant level through measures outlined in Section 8.0 below.

Segment 3

Implementation of the structures within Segment 3 would temporarily impact approximately 32 acres of Mojave creosote bush scrub and 23 acres of Mojavean juniper woodland and scrub. These vegetation communities provide suitable habitat for the desert tortoise, Mojave ground squirrel, burrowing owl, Le Conte's thrasher, San Diego coast horned lizard and nesting birds. Temporary impacts to these vegetation communities would not be considered significant. However, injury/mortality to the special-status species potentially occurring within these communities would be considered significant if not avoided or mitigated. These impacts would be mitigated to a less than significant level through measures outlined in Section 8.0 below.

Direct Impacts (Permanent and Temporary) per Affected Plant Community

Mojave Creosote Bush Scrub

Project development would result in the direct loss of approximately 385 acres of Mojave creosote bush scrub. Approximately 342 acres would be permanently impacted as a result of surface-disturbing activities proposed within the power plant site, two construction staging areas, sanitary and reclaimed water pipeline ROWs, and electrical transmission line Segments 1-3. In addition, 43 acres of Mojave creosote bush scrub would be temporarily impacted as a result of proposed construction activities within transmission line Segments 1, 2, and 3.

Desert Saltbush Scrub

Approximately, 0.21 acres of desert saltbush scrub would be directly impacted by Project activities. Very little (<0.01 acre) of this vegetation community would be permanently and 0.2 acres temporarily impacted in this area.

Mojavean Juniper Woodland and Scrub

Project development would result in the direct loss of approximately 23 acres of Mojavean juniper woodland and scrub. Approximately 0.17 acres would be permanent and 23.2 acres temporarily impacted as a result of surface-disturbing activities associated with the construction of the electrical transmission line in Segment 3.

Non-native Grassland

Development of portions of the power plant site would result in the permanent loss of approximately three acres characterized as non-native grassland. Temporary disturbance to this vegetation community are not expected.

Disturbed/Developed Areas

Disturbed/developed areas include graded areas associated with the VVWRA facility, dirt and paved roads, existing structures, and landscaped areas immediately surrounding dwellings and structures. Development of the Project site would result in the permanent loss of approximately

54 acres of previously disturbed/developed areas including 50 acres on the power plant site, 2.36 acres within the VVWRA portion of the reclaimed water line, and 1.22 acres along the sanitary wastewater pipeline. No temporary impacts are anticipated for the disturbed/developed areas.

Direct Impacts to General Wildlife and Animal Movement Corridors

Onsite vegetation communities provide habitat for wildlife common to each community. Habitat within impact areas of the Project site would be permanently or temporarily lost as a result of temporary surface disturbance.

Animal movement corridors present with the affected habitats would be disrupted as a result of permanent and temporary surface disturbance and human work activity presence associated with the Project. Although no specific wildlife movement corridors have been identified within the Project area (as to do so would require extensive studies over a period of multiple years), movement corridors are nevertheless expected to occur on the site. The most likely areas that such corridors are expected include onsite drainages, ridgelines, small valleys, and along man-made features (e.g., fences, structures, dirt roads) that direct animals in a certain direction. Wildlife most likely to utilize such corridors include, but are not limited to, the larger predatory species such as the coyote, kit fox, bobcat, striped skunk, and Virginia opossum.

Adjacent non-impacted lands provide viable alternative animal movement habitat for the affected species. Wildlife using the onsite areas would largely be displaced to adjacent lands as a result of habitat loss resulting from the proposed project. The Project has been designed to avoid all impacts to onsite washes and drainages, which serve as likely wildlife movement corridors. For this reason and due to the availability of adjacent lands for alternative wildlife movement and in addition to mitigation measures required for other impacts (i.e., offsite habitat compensation, habitat restoration), direct impacts to general wildlife and animal movement corridors are considered to be less than significant.

Direct Impacts to Migratory and Nesting Birds

Birds nesting within the Project area during construction activities would be permanently impacted by project activities. The special status bird species most likely to nest throughout the footprint of the Project site include burrowing owl, Le Conte's thrasher, loggerhead shrike, and Costa's hummingbird. This impact would be considered significant if not avoided or mitigated. Mitigation measures outlined in Section 8.1.11 which includes nesting bird clearance surveys during the nesting season and biological monitoring would be implemented to minimize impacts to nesting birds and reduce them to a less than significant level. Additionally, certain features of the Project, once implemented, may provide nesting opportunities for certain birds of prey. Project structures may also provide nesting and foraging habitat for scavenging migratory birds such as the Common Raven.

Elevated Project structures (i.e., transmission line towers) could potentially result in occasional bird collisions. Most recorded bird collisions with ground structures involve species migrating at night during severe weather and/or during conditions with low visibility, colliding with tall guyed

television or radio towers/antennas. Although considered to be possible, bird mortality as a result of collision with Project structures is considered to be less than significant, as the Project will not use any tall guyed antennas and the area of the Project site is not prone to weather conditions exhibiting low visibility. Low visibility in the Victorville area would be considered a very rare event.

Electrocution of large birds of prey by transmission lines has also been well documented in the past. Historically this was a problem resulting from a large bird simultaneously coming in contact with two conductors, or a conductor and a ground. All electrical transmission lines for the VV2 Project would be constructed with sufficient clearance between conductors and grounds to protect raptors and other large birds from electrocution. Installation of transmission lines and towers according to the guidelines recommended in the "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006" (APLIC, 2006) would reduce potential impacts to less than significant.

Direct Impacts to Special Status Species

Special Status Plant Species

No federally or state listed annual plant species are known to occur in proximity to the Project area. However, one annual plant species recognized by the California Native Plant Society (CNPS) as List 1B species and considered BLM sensitive in the West Mojave Plan (i.e., Mojave monkeyflower) and three List 2 species (i.e., small-flowered androstephium, Booth's evening primrose, and sagebrush loeflingia) are known from the vicinity. None of these species were detected in the survey efforts conducted on portions of the Project area. It should be noted, however, that for various reasons surveys were not conducted throughout all suitable areas of the site. Additionally, 2006 was a poor year for annual flowering plant species in the Mojave Desert (P. McKay pers. com). For these reasons, absence determinations for these species could not be conclusively made.

Additionally, Joshua trees and three species of native cacti (i.e., silver cholla, pencil cholla, and beavertail cactus) were observed throughout various areas of the project site. These species are not designated as sensitive by either the USFWS or CDFG, however are regulated and managed as species requiring special protection measures and/or permits for impacts by the California Native Plant Protection Act, by Title 13 of the City of Victorville Municipal Code (Ordinance No. 1224), and by Title 16 of the City of Hesperia Municipal Code.

Small-flowered Androstephium (Androstephium breviflorum)

Although the species has been reported from one location in the vicinity of the where Segments 2 and 3 converges, only very limited areas of the Project site are considered to have a low potential for occurrence of this species, as much of the site does not support extensively sandy soils. The areas that have the sandiest soils, and thus appear to be the most suitable for this species, are within the onsite washes. The Project has been designed around all of the onsite washes to avoid all impacts to these areas. For this reason, in addition to mitigation measures

required for other impacts (i.e., habitat restoration, offsite habitat compensation) impacts (if any) to this species are not expected to be significant.

Booth's Evening Primrose (Camissonia boothii ssp. boothii)

Although the species has been reported from the vicinity of the Project site, only very limited areas of the Project site are considered to have a low potential for occurrence of this species, as much of the site does not support extensively sandy soils. The areas that have the sandiest soils, and thus appear to be the most suitable for this species, are within the onsite washes. The Project has been designed around all of the onsite washes to avoid all impacts to these areas. For this reason, in addition to mitigation measures required for other impacts (i.e., habitat restoration, offsite habitat compensation) impacts (if any) to this species are not expected to be significant.

Sagebrush Loeflingia (Loeflingia squarrosa var. artemisiarum)

Although the species has been reported from one location in the vicinity of a portion of Segment 3, only very limited areas of the Project site are considered to have a low potential for occurrence of this species, as much of the site does not support extensively sandy soils. The areas that have the sandiest soils, and thus appear to be the most suitable for this species, are within the onsite washes. The Project has been designed around all of the onsite washes to avoid all impacts to these areas. For this reason, in addition to mitigation measures required for other impacts (i.e., habitat restoration, offsite habitat compensation) impacts (if any) to this species are not expected to be significant.

Mojave Monkeyflower (Mimulus mohavensis)

Relatively little habitat (i.e., gravelly and sandy washes) considered suitable for the species occurs on, or even in the vicinity of the Project site. Additionally, the Project has been designed to avoid all impacts to onsite washes. For these reasons, impacts to this species are not expected as a result of project implementation and thus would not be significant.

Joshua Tree (Yucca brevifolia)

Joshua Trees would be lost as a result of Project activities throughout various areas of the site, particularly on the power plant site, the two adjacent staging areas, and possibly along the three segments comprising the linear features, as this species is present throughout all areas of the site. Direct impacts to Joshua trees from the proposed Project would be considered significant if not avoided or mitigated. The mitigation measures outlined in Section 8.1.3, which including the salvaging of impacted Joshua trees and either relocating them to local adoption program or transplantation into facility landscape design plans and/or site restoration would be implemented to reduce these impacts to a less than significant level.

Cacti (Opuntia spp.)

Three species of native cacti (i.e., Silver Cholla, Pencil Cholla, and Beavertail) were observed throughout the various areas of the Project site. Per the NPPA, all species of native cacti are regulated. Additionally, two sensitive species of cacti (i.e., Mojave fishhook cactus and short-joint beavertail) have been reported from the vicinity of the site. These cacti species would be lost as a result of Project activities throughout various areas of the site, again particularly on the power plant site, the two adjacent staging areas, and possibly along the three segments comprising the linear features, as these species were observed throughout all areas of the site. Direct impacts to native cacti from the proposed Project would be considered significant. The mitigation measures outlined in Section 8.1.3, which including the salvaging of impacted native cacti and transplantation into facility landscape design plans and/or site restoration, would be implemented to reduce these impacts to a less than significant level.

Special Status Wildlife Species

Implementation of the Project would impact a variety of sensitive wildlife species to varying degrees, including the state and federally listed-threatened desert tortoise. Other special status species potentially affected by the Project include Mohave ground squirrel, burrowing owl, southwestern pond turtle, San Diego coast horned lizard, Le Conte's Thrasher, loggerhead shrike, and San Emigdio blue butterfly. These anticipated impacts to special status wildlife are summarized separately below.

Desert Tortoise (Gopherus agassizii)

Surface disturbance associated with the proposed power plant site would directly impact at least two adult desert tortoises identified onsite and perhaps other adult or immature desert tortoises not yet documented onsite. Additionally, four desert tortoises were observed within the Project ZOI. Since desert tortoises occupy numerous burrows during activity periods and have a home range of up to 450 acres (BLM 2005) tortoises within the ZOI may also use areas of the Project site. Thus, these individuals have the potential to be directly impacted by project activities.

Direct impact would include permanent and temporary loss of approximately 401 acres of desert tortoise habitat and potential "take" of these animals. These impacts are considered significant if not avoided or mitigated. Mitigation measures including participating in a federal Section 7 consultation by the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence with the Project BO, offsite habitat compensation and impact minimization measures for this species. A detailed discussion of these mitigation measures are provided in Sections 8.1.1 and 8.1.4 below.

Mohave Ground Squirrel (Spermophilus mohavensis)

The 2006 trapping survey for Mohave ground squirrel conducted on portions of the Project site resulted in negative findings. Despite this, the project proponent has elected to assume presence of this state-threatened species within all potentially suitable habitat affected by the Project and consult with the CDFG for project-related impacts. Direct impacts as a result of Project activities therefore are assumed for approximately 401 acres of Mohave ground squirrel

potential habitat. Direct impacts to this species are considered significant if not avoided or mitigated. Mitigation measures, outlined in Sections 8.1.1 and 8.1.5s would be implemented to reduce the impacts to a less than significant level. Additionally, a CESA Section 2081 incidental take permit will be obtained from CDFG for Mohave ground squirrel.

Burrowing Owl (Athene cunicularia)

At least four live Burrowing Owls were observed at locations throughout the project vicinity during the various biological field studies conducted (see Map 11). Additionally, indications of current and past Burrowing Owl use (i.e., burrows exhibiting whitewash, pellets, feathers, etc.) were observed within various areas of the project footprint. Thus, direct impacts to this species as a result of Project activities are possible. This would include loss of foraging habitat for at least three owls totaling a minimum of 19.5 acres. Additionally, injury or mortality to this species may also occur as a result of Project implementation. Therefore direct impacts to this species are considered significant. Mitigation measures, outlined in Sections 8.1.1 and 8.1.6, would be implemented to reduce the impacts to a less than significant level. These mitigation measures would include a focused nesting season burrowing owl survey conducted within one year prior to construction (i.e., 2007 or 2008) and a 30-day pre-construction survey conducted throughout all suitable areas of the site. Additionally, specific California Protected Raptor impact minimization permitting, habitat loss compensation and CDFG-recommended mitigation measures (see Sections 8.1.1 and 8.1.6 below) would be implemented for all Burrowing Owls detected at any time prior to facility installation.

Le Conte's Thrasher (Toxostoma lecontei), Loggerhead shrike (Lanius ludovicianus), Costa's hummingbird (Calypte costae), grey vireo (Vireo vicinior)

Vegetation removal and human activity associated with implementation of the proposed Project would directly impact these species by displacing foraging birds to neighboring lands. Additionally, Project activities conducted during the nesting seasons for these species could cause bird injury/mortality or nest abandonment, to nesting individuals within the planned work areas. These impacts are considered significant if not avoided or mitigated. However, mitigation measures including pre-construction clearance surveys during the breeding season, establishing buffer areas of around nest sites, and postponing Project activities until nestlings have fledged, would be implemented to reduce these impacts to a less than significant level. A detailed description of these measures is provided in Section 8.1.11 below.

Southwestern Pond Turtle (Actinemys [formerly Clemmys] marmorata pallida)

Although considered unlikely, individuals of this species may be injured or taken during Project activities conducted along the portion of the reclaimed water pipeline within the VVWRA treatment facility. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures would be implemented to reduce potential impacts to a less than significant level. These measures are outlined in Section 8.1.7 and include: 1) confining all project construction and associated activities to existing compacted perimeter access roads and 2) conducting daily clearance surveys in this area.

San Diego Coast Horned Lizard (Phrynosoma cornatum blainvillii)

Development of the transmission line within the southern portions of Segment 3 has the potential to directly impact the San Diego coast horned lizard. This impact would result from the permanent and temporary direct loss of 23 acres of Mojavean juniper woodland and scrub. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including avoiding impacts to onsite washes and biological monitoring, would be implemented to reduce potential impacts to a less than significant level. These measures are summarized in Sections 8.1.1 and 8.1.8 below.

Mojave River Vole (Microtus californicus mohavensis)

Development of the Project features within Segment 1 has the potential to directly impact the Mojave River Vole. This potential impact would result from the possibility of direct mortality or injury resulting from Project activities located adjacent to this species habitat. Direct impacts to this species would be considered significant if not avoided or mitigated. However, the Project has been designed to avoid impacts to all onsite washes, in addition to biological monitoring. Implementation of these measures would reduce potential impacts to this species to a less than significant level. These mitigation measures are detailed in Sections 8.1.1 and 8.1.9 below.

San Emigdio Blue Butterfly (Plebulina emigdionis)

Development of the two transmission line tower locations would result in a total of approximately 100 sq. ft. of permanent loss of the desert saltbush scrub vegetation community that may provide suitable habitat for this special status butterfly. Direct impacts to this species are not considered significant due to the very limited amount of potentially suitable desert saltbush scrub habitat that would be permanently impacted and the Project has been designed to avoid all washes that may also provide potentially-suitable habitat for this species. This resulting approximate 100 sq. ft. potential impact to potentially suitable habitat for this species considered to be negligible.

Direct Impacts to Jurisdictional Waters

A total of 55 ephemeral dry washes occur within the Project area. Surface disturbance impacts to these streambeds would require specific permitting by CDFG under Section 1600 of the California Fish and Game Code for impacts to WCS and by the USACE under Section 404 of the CWA for surface disturbance impacts to WUS exceeding a specific acreage limits. Water Quality Certification and/or waste discharge permitting would also be required by the RWQCB under Section 401 of the CWA, if state waters may be impacted by surface disturbance actions.

Current design plans for implementation of the proposed Project include avoidance of surface disturbance to all state and federal jurisdictional waters. No federal or state waters are located within the proposed footprint of the power plant and the adjacent construction staging areas. Proposed transmission line utility features have been designed to span all state/federal waters and avoid any surface disturbance impacts to these jurisdictional areas. New access roads are planned to avoid all state and federal jurisdictional waters. Existing dirt road will be utilized where present for project-related drainage crossings. Directional boring of the sanitary waste

water pipeline under one state jurisdictional waters (Drainage # 1) is proposed. No vegetation clearing, grading, digging, placement of fill, or use of culverts are currently proposed for any of the 55 jurisdictional drainages located throughout the linear features of the Project.

If it is determined at a later date that the Project cannot avoid surface disturbance activities within state/federal waters, specific permitting as outlined above would be necessary. This would likely entail submission of a USACE Nationwide permit application, as well as an application for a LRWQCB Water Quality Certification, according to established guidelines. In addition, mitigation as outlined in Section 8.1.12 would be incorporated into these permit applications.

7.3.3 Indirect Impacts of the Project

Implementation of the Project may also indirectly impact biological resources located offsite in a variety of ways.

Adjacent areas are occupied by the desert tortoise, burrowing owl, potentially by the Mohave ground squirrel, as well as other special status species such as Le Conte's thrasher and loggerhead shrike. Portions of the Project area are located in close proximity to the Mojave River, which supports a variety special status species including, but not limited to the endangered least Bell's vireo, endangered southwestern willow flycatcher, and special concern species such as the southwestern pond turtle, Mojave River vole, and yellow warbler. This Mojave River corridor is also an important migratory flyway and nesting/foraging habitat for a wide variety of other species, including birds of prey. The VVWRA facility is also located adjacent, which provides aquatic habitat for a variety of waterfowl, as well as the southwestern pond turtle.

Indirect impacts include "edge effects." Examples of edge effects include, but are not limited to, the following:

- Human activity in areas not generally having this presence;
- Attraction and/or facilitation of human-subsidized scavenger use;
- Temporary and/or permanent increases in ambient night lighting as a result of the use of street, parking lot, and/or building lights;
- Runoff of hazardous materials into adjacent areas;
- Changes in surface drainage patterns following precipitation events;
- Temporary and/or permanent noise increases;
- Increases in fugitive dust that may accumulate on offsite plants; and
- The introduction of exotic or invasive plants or animals.

Human activity can alter wildlife behavior patterns. Some of this activity can result in the displacement or attraction of some wildlife. Temporary and permanent changes in ambient night lighting can result in higher predation rates upon wildlife by nocturnal predators, due to increased visibility during nighttime hours. Runoff of hazardous materials can adversely affect special status plants and animals, as well as more commonly occurring species. The water table in general, which supports offsite plants and animals, can similarly be affected.

Surface drainage changes can alter the extent and health of native plant communities. Increases in noise can disrupt the normal behavior patterns of wildlife, sometimes resulting in displacement of these animals.

Fugitive dust accumulation can result in a decreased reproductive viability of affected plants, sometimes resulting in the reduction of available food and cover sources for wildlife. The introduction of exotic and/or invasive species can likewise degrade offsite habitats, alter wildlife behavior patterns and/or result in animal displacement, injury or mortality in affected areas.

Variable levels of indirect impact are anticipated to occur as the result of implementing the proposed Project. Construction activities have the potential to result in temporary indirect impacts in a variety of ways (e.g., human presence/activity, increased lighting, noise and dust). Permanent indirect impacts associated with routine operations of the Project are also anticipated as a result of the Project. These would include those impacts resulting from increased permanent noise, light, and human presence activities; as well as potential alterations to drainage patterns and discharge from the VV2 Project site.

Both potential temporary and permanent indirect impacts are summarized separately below.

Indirect Impacts to Desert Tortoise

Indirect impacts to desert tortoise may result from a variety of Project-related factors. Construction of the various Project features may serve as barriers, or function to inhibit/reduce desert tortoise movement. This would effectively fragment a functioning population.

Fugitive dust generated by project construction has the potential to decrease offsite germination of annual plant species, which comprise a large portion of the desert tortoise's diet.

Additional nesting, perching and shade opportunities would be created for the common raven, a scavenging species known to predate hatchling and juvenile desert tortoises. Simple human presence associated with Project operations, in addition to any trash/garbage generated by Project-related activities, would likely attract common ravens to the area as well.

Additional roads and increased traffic created by the Project would result in an increased potential for desert tortoise injury and/or mortality associated with vehicle travel, illegal collection, as well as possibly improve the ability of some desert tortoise predators to secure prey. Other human actions possibly detrimental to desert tortoises, such as garbage dumping and an increased chance of wildfire creation could be created with the addition of roads in this species' habitat.

All of these indirect impacts to the desert tortoise are considered significant if not avoided or mitigated. Mitigation measures including participating in a federal Section 7 consultation by the USFWS and receipt of a Project BO, obtaining from CDFG a CESA Section 2080.1 concurrence with the Project BO, offsite habitat compensation and impact minimization measures for this species. A detailed discussion of these mitigation measures are provided in Sections 8.1.1 and 8.1.4 below.

Indirect Impacts to Migratory and Nesting Birds

Indirect impacts to riparian-nesting special status bird species such as the southwestern willow flycatcher, least Bell's vireo, western yellow-billed cuckoo, Nuttall's woodpecker and other species may occur as a result of Project related activities and loud noises associated with the installation of portions of Segment 1 located in close proximity to riparian areas (i.e., reclaimed water pipeline in the VVWRA treatment facility) if conducted during the breeding season of these species (Feb 15-Aug 31). For this reason, to avoid the potential to impact these special-status species, impact avoidance measures have been developed. These include conducting the construction activities for the areas in close proximity to riparian habitats potentially suitable for these species outside the breeding season. Additionally, biological monitoring during construction in these areas would further ensure that impacts do not result.

Construction Dust, Lighting and Noise

Various activities, such as the operation of heavy equipment, have the potential to generate levels of disturbance adjacent to the Project area during the initial construction phase. Some bird species may abandon nests if nearby noise levels are excessive. Dust generated by construction activities has the potential to drift off the Project site and settle on adjacent habitats and vegetation. This can result in both adverse plant and insect use effects.

In general, initial Project construction activities would result in temporary reduction of wildlife use on adjacent lands as a result of construction dust, lighting and noise. The latter may also result in a minimal effect on adjacent plants. Wildlife use would be expected to return to pre-construction rates following the completion of construction activities.

Operations Dust, Lighting and Noise

Following initial construction activities, Project operations would also generate varying levels of dust, lighting and noise disturbance adjacent to the proposed power plant and on limited occasion, in proximity to utility features. These levels of impacts, often associated with maintenance actions, would be of smaller magnitude than those associated with construction and would be of short duration. A small, less than significant, increase in these impacts would also be anticipated for day-to-day general Project operations at the proposed power plant.

Indirect Impacts to Jurisdictional Waters

Potential adverse impacts to adjacent areas could occur as a result of inadequate controls or containment of onsite drainage or fluid discharge. Improperly contained or directed precipitation drainage, as well as uncontrolled fluid discharge, could result in erosion and sedimentation indirect impacts. Such impacts can adversely affect offsite vegetation, waterways and/or the underlying water aquifer. Appropriate design of onsite precipitation drainage, storm-water and miscellaneous fluid discharge would reduce this potential indirect impact to a less than significant impact.

7.3.4 Cumulative Impacts of the Project

Impacts associated with the Project, when considered individually, may not be considered significant. However, when considered collectively with other past, present, and future projects in the region, these Project impacts may contribute incrementally to the loss of habitat or individual special-status species. If the Project's incremental contribution were to be substantial, then the project could be considered to have significant cumulative impacts.

The City of Victorville, like many other areas of the Western Mojave Desert, is currently experiencing expanding development and growth. For example, the City and Burlington Northern Santa Fe Railroad have begun planning for the development of a 1,600-acre intermodal railway logistics facility located at the SCLA that will involve the conversion of lands in the immediate VV2 Project vicinity from undeveloped to developed and thus reduce available habitat.

Due to the high levels of human activity in the area, habitat loss, degradation, and fragmentation are considered significant issues in the West Mojave Plan. The VV2 Project will contribute to the ongoing conversion of land areas from undeveloped to developed and thus reduce the amount of available habitat for a number of special-status species including the desert tortoise, Mohave ground squirrel, and burrowing owl. However, loss of onsite habitat for these species will be mitigated by the requirement for the Project to provide suitable offsite habitat for these species. Providing compensation in the form of permanently protected offsite mitigation acreage, combined with other general mitigation measures described in Section 8.0 to minimize the effects of Project activities on biological resources will reduce the Project's potential cumulative biological impacts to a level that is less than significant.

8.0 PROPOSED MITIGATION

8.1 Intent and Summary

The recommendations and measures outlined under the specific headings below are intended to mitigate potential significant impacts resulting from the construction, operation and maintenance aspects of the VV2 Project to a less than significant level. As such, this mitigation is considered an integral component of the Proposed Action. Additional mitigation measures and/or impact minimization conditions may also be identified through the course of subsequent Project approval processes.

8.1.1 General Mitigation

- 1) All Project construction, operation, maintenance and/or termination actions would comply with applicable state and federal laws.
- 2) All work activities would be restricted to specifically approved and clearly marked areas.
- 3) A Field Contact Representative (FCR) would be designated to oversee and be responsible for compliance with conditions of Project approval. This FCR would be on

site or easily accessible during all project activities and would have the authority to halt all project activities that are in violation of conditions of Project approval.

- 4) Only water or gravel placement would be employed to control fugitive dust emissions. Construction and maintenance vehicles would observe a 15-mile per hour speed limit on all unpaved roads in the Project Area to reduce fugitive dust emissions.
- 5) Prior to mobilization of construction activities on site, all vehicles and equipment would be inspected to ensure these vehicles and equipment are operating correctly and free of fluid leaks. Equipment would be inspected daily to make sure that there are no fluid discharges.
- 6) All personnel working during the construction, operation or maintenance of the proposed VV2 Project would be required to attend an Environmental Awareness and Project Approval Compliance Training. This training would be presented by a qualified biologist familiar with the Desert Tortoise, Mojave ground squirrel, burrowing owl, and other special-status species with potential to occur within the Project area.

Habitat Restoration

Without revegetation and restoration, areas of the Project would be left heavily disturbed, vulnerable to invasion by exotic plant species, and generally less suitable or unsuitable for native species use. Therefore specific areas of the Project site would be revegetated and restored upon completion of Project activities in those areas.

Upon completion of construction of the power plant site and the need for the adjacent 50 acres of construction staging/laydown areas, these areas would be revegetated and restored. Additionally, upon completion of construction of the 275 new transmission line towers, stringing of new lines, and the installation of the two pipelines for the Project, the temporarily disturbed areas (i.e., the two construction staging areas, all pulling sites, all tower assembly areas, areas needed for off-road vehicular travel) would be reclaimed, revegetated, and/or restored. Techniques used for these efforts will be subject to project-specific approval by the USFWS, CDFG, and/or other involved agencies and may include any or all of the following methods: 1) vertical mulching; 2) raking tracks; 3) imprinting; 4) transplantation of salvaged Joshua trees and cacti; and 5) and hand broadcasting of native seed from locally-collected seed stock.

The “vertical mulching” technique involves the horizontal/vertical planting of whole shrub skeletons within the disturbance footprint areas proposed for revegetation. Appropriate salvage and storage of the shrub skeletons from disturbance areas at the time of initial site clearance/blading is critical for the success of this technique, as it is important to preserve as much of the integrity of the shrubs as possible to replant after completion of construction. Additionally, Joshua Trees and cacti would be salvaged from the disturbance footprint of the power plant site, the construction staging areas, and Segments 1-3 and used in subsequent final site reclamation work in combination with the vertical mulching revegetation technique.

The “raking” technique involves the manual raking of the ground where surface disturbance has occurred to remove any evidence of tire tracks, trampling, staging of equipment, or any other minor surface disruptions. This method is typically reserved for relatively small areas of minor disturbance.

The “imprinting” technique involves the use of a piece of heavy equipment called an “Imprinter” which is specifically designed for the revegetation of large areas of disturbance. This machinery typically contains a built-in container in which seed is placed. As the Imprinter is driven across the disturbed areas of the site the seed is evenly distributed and dropped immediately in front of a large rolling wheel complete with various-shaped projectiles that drive the seed into the ground and create an uneven surface providing safe sites for the seed and other seeds naturally blown in to germinate. The uneven surface created by imprinting in combination with vertical mulching and strategic planting of Joshua Trees and cacti and the placement of rocks, dead Joshua Tree limbs, and other surface material can discourage off-road travel across these areas.

Transplantation of salvaged Joshua Trees and cacti would involve the excavation and relocation of all Joshua Trees and cacti within the disturbance footprint of all portions of the site by a qualified and experienced native desert plant arborist. A tree spade is typically used. All salvaged plants would be stored and cared for at a pre-determined and agency-approved location. Upon completion of site disturbance, transplantation of the salvaged plants would take place.

The “hand broadcasting” method involves the manual spreading of locally-collected seed stock of native plant species across the disturbed areas of the site. This method is generally used for relatively small areas of disturbance and may be substituted by the imprinting method for larger areas of the site.

All revegetation, along with all construction activities, operation of heavy equipment, and/or driving of vehicles across undisturbed areas of the site would be monitored by a qualified biologist to minimize impacts to the Desert Tortoise and project disturbance and ensure compliance with all project-specific environmental regulations and requirements.

Restoration progress monitoring utilizing specified regulatory agency-accepted techniques would be required for a specified time period (usually 5-10 years) following project completion to document progress, provide additional recommendation to achieve the restoration goals (usually a specified % cover of native species) of the overseeing agency.

8.1.2 Small-flowered *Androstephium*, Booth’s Evening Primrose, Sagebrush *Loeflingia*, and Mojave Monkeyflower

Direct impacts to the potentially-occurring plant species (i.e., small-flowered androstephium, Booth’s evening primrose, sagebrush loeflingia, and Mojave monkeyflower) will be mitigated in the following ways: 1) avoiding impacts to the areas most likely to support these species (i.e., washes and drainages); 2) conducting focused surveys for these species throughout potentially-

suitable areas of the site during the appropriate survey period prior to the start of Project construction; and 3) notification to the CDFG at least 10 days prior to the commencement of Project construction to allow for salvage of these species (if found to be present). Furthermore, clearance surveys and biological monitoring would be conducted throughout all areas of the Project site prior to and during ground disturbance; should any special status plant species be detected during these surveys and monitoring, CDFG would be notified and appropriate action (if any) would be implemented.

Additionally, all habitats temporarily disturbed through project activities will be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above (Section 8.1.1).

8.1.3 Joshua Trees and All Native Cacti

In accordance with the California Native Plant Protection Act, Title 13 of the City of Victorville Municipal Code (Ordinance No. 1224), and Title 16 of the City of Hesperia Municipal Code, permits and authorization to remove, transport, or otherwise impact Joshua trees will be obtained prior to Project approval. Joshua trees and native cacti will either be relocated to pre-determined, agency-approved locations, made available to a local adoption program or transplanted per facility landscape design plans and/or used in site habitat restoration as detailed above in the Habitat Restoration section of General Mitigation section above (Section 8.1.1).

8.1.4 Desert Tortoise (*Gopherus agassizii*)

The following measures have been designed to fully mitigate adverse impacts to this state and federally listed-threatened species, which has been recorded within the Project area. ESA Section 7 consultation initiated by the EPA and incidental take permitting by the USFWS would be required to fully mitigate impacts to this species. Specific terms and conditions incorporating these measures would be specified by the USFWS in an associated BO.

CDFG, as the corresponding responsible state agency, would be expected to adopt the federal BO with regard to the Project. However, CDFG would also have the option of issuing a separate incidental take permit under CESA Section 2081.

Construction Site Clearance, Fencing and Monitoring

Following issuance of Project approvals and incidental take permitting, all areas within the Project footprint would be surveyed for desert tortoises using 100% clearance protocol in accordance with "*Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise*" (USFWS 1992).

All recorded desert tortoise burrows, and any other burrows potentially sheltering desert tortoises, would be excavated by authorized biologists utilizing state/federal agency-approved guidelines (Desert Tortoise Council 1994, revised 1999). A Project-specific Desert Tortoise

Relocation Plan would be prepared to address desert tortoises residing in the Project footprint areas.

All live desert tortoises encountered would be relocated by authorized biologists to pre-approved locations and monitored for a period specified by the USFWS and/or CDFG. A translocation plan will be prepared by the Project applicant in conjunction with USFWS and CDFG, and impacts to both translocated tortoises and receiving population tortoises will be fully analyzed and mitigated.

After all onsite burrows have been excavated and all desert tortoises relocated, approved desert tortoise exclusion fencing would be installed to prevent re-entry into the area by the species. Permanent site fencing would be installed around the perimeter of the proposed power plant, under the direction and monitoring of an approved biologist. The USFWS or CDFG may require that permanent desert tortoise exclusion fence installation precede the excavation of burrows and relocation of desert tortoises.

Approved temporary site fencing would also be similarly employed for large temporary construction zones (i.e., staging areas, open trenches along portions of Segment 1, etc.). However, instead of fencing small zones of habitat impact, such as individual transmission tower structure installations, sufficient monitoring personnel with approved desert tortoise handling authorization would be employed to ensure the species is not harmed during the course of construction work in these areas.

Specific desert tortoise impact minimization and animal handling measures are outlined in the Specific Impact Minimization Measures section below.

Offsite Habitat Compensation

Direct and indirect impacts to desert tortoise habitat will be compensated with the acquisition of suitable desert tortoise habitat. The amount and location of the compensation lands will be determined in negotiations with, and approved by, USFWS and CDFG. An implementation agreement with a mitigation banking and land management entity (e.g. the Desert Tortoise Preserve Committee (DTPC) or other third party entity approved by USFWS and CDFG) would be secured to acquire the compensation habitat, initially enhance and manage it over the long term for the benefit of the desert tortoise.

Habitat Restoration

All desert tortoise habitats temporarily disturbed through project activities will be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above (Section 8.1.1).

Specific Impact Minimization Measures

- 1) The designated FCR would oversee and be responsible for compliance with conditions of Project approval. This FCR would be on site or easily accessible during all project activities and would have the authority to halt all project activities that are in violation of conditions of Project approval.

- 2) In accordance with "*Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise*" (USFWS 1992), an Authorized Desert Tortoise Biologist (Authorized Biologist) should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields.

The Authorized Biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and their sign. As a guideline, an Authorized Biologist should have 60 field days of experience. In addition, the biologist shall have the ability to recognize and accurately record survey results.

- 3) Construction and maintenance personnel in non-desert tortoise exclusion fenced areas would be required to inspect for desert tortoises under vehicles prior to moving the vehicle. If a desert tortoise is found beneath a vehicle, it would not be moved until the desert tortoise had left of its own accord. All desert tortoise observations would be reported to the Authorized Biologist, and subsequently, to the FCR.
- 4) If a desert tortoise is in imminent danger with immediate death or injury likely (such as from an approaching vehicle or equipment), and the desert tortoise has been given the opportunity to move but has withdrawn in its shell and is not moving, an approved authorized biologist or environmental monitor may capture the desert tortoise and place it in a clean cardboard box or similar container.
- 5) Upon locating or receiving a report of a dead/injured tortoise in the Project area, the FCR or appointed agent would be required to immediately notify the local CDFG and USFWS representatives.
- 6) All burrows found during clearance surveys, whether occupied or vacant, would be excavated by the Authorized Biologist and collapsed or blocked to prevent desert tortoise reentry.
- 7) All burrows would be excavated with hand tools to allow removal of desert tortoises or their eggs. All desert tortoise handling/excavations, including nests, would be conducted by the Authorized Biologist in accordance with USFWS-approved protocol (Desert Tortoise Council 1999).
- 8) All desert tortoises and their eggs within long-term impact areas would be relocated offsite 300 feet to 2 miles into adjacent undisturbed habitat. Tortoises found above ground would be placed under a bush in the shade. A desert tortoise located in a burrow would be placed in an existing unoccupied burrow of the same size and orientation as the one from which it was taken.
- 9) If a suitable natural burrow is unavailable or the occupancy status of the burrow is in question, the Authorized Biologist would construct one of the same size/orientation as the one from which it was removed, using the protocol for burrow construction in Section B-5-f (Desert Tortoise Council 1999).

- 10) Any desert tortoise found within one hour of nightfall would be placed in a separate clean cardboard box and held in a cool, predator-free location. The box would be covered and kept upright at all times to minimize stress to the tortoise.
- 11) Each box would be used only once and then disposed of properly. The desert tortoise would be released the next day in the same area from which it was collected and using the procedures described above.
- 12) Each desert tortoise would be handled with new disposable latex gloves. After use, the gloves would be properly discarded and a fresh set used for each subsequent tortoise handling.
- 13) The Authorized Biologist would be onsite during the periods when desert tortoises are expected to be active, to ensure construction activities are in compliance with an issued biological opinion and to ensure that any desert tortoises wandering on to the construction site via unfenced areas would not be inadvertently harmed.
- 14) The Authorized Biologist would be responsible for: (a) enforcing a litter-control program; (b) ensuring that desert tortoise exclusion fences are maintained where applicable; (c) ensuring that desert tortoise habitat disturbance is restricted to authorized areas; (d) ensuring that all equipment and materials were stored within the boundaries of previously disturbed areas; (e) ensuring that all vehicles associated with construction activities remain within the proposed construction zones; and (f) ensuring compliance with the terms and conditions of the issued biological opinion.
- 15) Desert tortoises would be handled according to USFWS-approved protocol (Desert Tortoise Council 1999).
- 16) Desert tortoises would be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they can not maintain surface and core temperatures necessary to their well-being.
- 17) Desert tortoises would be kept shaded at all times until was safe to release them.
- 18) No desert tortoise would be captured, moved, transported, or purposely caused to leave its burrow for whatever reason when the ambient temperature is above 95°F (35°C). Ambient air temperature would be measured in the shade, protected from the wind, at a height of 2 inches (5 cm) above the ground surface.
- 19) No desert tortoise would be captured if the ambient air temperature is expected to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises would be kept shaded in an environment that does not exceed 95°F (35°C), and the animals would not be released until ambient air temperature declines to below 95°F (35°C).

- 20) Project activities that might endanger a desert tortoise would cease if a desert tortoise is found on an active work area. Project activities would resume after the Authorized Biologist removed the desert tortoise from danger of after the animal had moved to a safe area on its own volition.
- 21) Any common raven nesting incidence encountered during construction, operation or maintenance of the Project would be reported to the appropriate authorities. The integrity of this resource would be maintained pending subsequent investigation and direction by these authorities. Common raven nest removal from proposed facilities, when determined necessary in consultation with the USFWS, would occur during the inactive nesting season.

8.1.5 Mohave Ground Squirrel (*Spermophilus mohavensis*)

Although the results of the 2006 small mammal trapping conducted in the vicinity of the proposed power plant site, the construction staging areas, and along areas of Segment 1 did not indicate the presence of the state listed-threatened Mohave ground squirrel, the Project proponent has elected to assume the presence of this species and obtain incidental take authorization from CDFG under CESA Section 2081 for the assumed impacts to this species. Associated offsite habitat compensation measures and specific impact minimization measures are outlined below.

Offsite Habitat Compensation

Direct and indirect impacts to Mohave ground squirrel habitat will be compensated with the acquisition of suitable Mohave ground squirrel habitat. The amount and location of the compensation lands will be determined in negotiations with, and approved by, CDFG. An implementation agreement with a mitigation banking and land management entity (e.g. the DTPC or other third party entity approved by CDFG) would be secured to acquire the compensation habitat, initially enhance and manage it over the long term for the benefit of the Mohave ground squirrel.

Habitat Restoration

All Mohave ground squirrel habitats temporarily disturbed through Project activities will be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above (Section 8.1.1).

Specific Impact Minimization Measures

- 1) Before initiating ground-disturbing activities, a representative (Designated Representative) responsible for communications with the CDFG and for overseeing compliance with an acquired CESA Incidental Take Permit would be designated.

The CDFG would be notified in writing prior to commencement of ground-disturbing activities of the representative's name, business address, and telephone number, and would be notified in writing if a substitute representative is designated.

- 2) Before initiating ground-disturbing activities, a biologist (Designated Biologist) knowledgeable and experienced in the biology and natural history of the Covered

Species would be designated to monitor construction activities in areas of Mohave ground squirrel habitat to help avoid the take of individual animals and to minimize habitat disturbance. The CDFG would be notified in writing prior commencement of ground-disturbing activities of the Designated Biologist's name, business address, and telephone number. The Designated Biologist would be subject to the approval by the CDFG.

- 3) Similar to the desert tortoise awareness training, an orientation program for all project personnel who will work on-site during project implementation and construction would be prepared and presented. The program would consist of a brief presentation from the Designated Biologist. It would include a discussion of the biology of the Mohave ground squirrel, the habitat needs of these species, their status under the California ESA, and the management measures provided in the associated incidental take permit. A fact sheet containing this information would also be prepared and distributed to personnel working onsite.

Upon completion of the orientation, employees would sign a form stating that they attended the program and understand all protection measures. These forms would then be filed at City of Victorville offices, to be made available to the CDFG upon request.

- 4) A trash abatement program would be initiated during pre-construction phases of The Project, and would continue through the duration of the Project. Trash and food items would be contained in closed (common raven-proof) containers and removed regularly (at least once a week) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
- 5) The CDFG would be notified relative to compliance with all pre-construction Conditions of Approval before any ground-disturbing activities are initiated. Compliance inspections would be conducted at least once a week during construction activities to assess compliance with all construction-phase impact minimization and mitigation measures, especially those requiring creation and maintenance of exclusion zones.
- 6) Every month for the duration of construction activities, the CDFG would be provided with a written Compliance Report to communicate observations made during compliance monitoring, as well as all other relevant information obtained by monitoring personnel.
- 7) An Annual Status Report would be provided to the CDFG no later than January 31st of every year, beginning with issuance of the CESA incidental take permit and continuing for the life of the Project.

Each Status Report would include, at a minimum: 1) a general description of the status of the project, including actual or projected completion dates, if known; 2) a copy of this table with notes showing the current implementation status of each mitigation measure; and 3) an assessment of the effectiveness of each mitigation measure in minimizing Project impacts.

- 8) The CDFG would be immediately notified in writing if any of the mitigation measures specified in the CESA incidental take permit were not implemented during the period indicated for their application.

- 9) All observations of Mohave ground squirrel and their sign during Project activities would be conveyed to the Designated Representative or Biologist. This information would be included in monthly compliance reports to the CDFG.
- 10) The Designated Biologist would have authority to immediately stop any activity that is not in compliance with the issued CESA incidental take permit, and to order any reasonable measure to avoid the take of Mohave ground squirrel.
- 11) Work personnel would access the Project area using existing routes and would not cross Mohave ground squirrel habitat outside of the Project area. To the extent possible, previously disturbed areas within the Project area would be used for temporary storage areas, material laydown sites, and any other surface-disturbing activities. If construction of offsite routes of travel would be required, the CDFG would be contacted prior to carrying out such an activity.
- 12) Any fuel or hazardous waste leaks or spills would be stopped and repaired immediately, as well as cleaned up at the time of occurrence. The storage and handling of hazardous materials would be excluded from the construction zone and any unused or leftover hazardous products would be properly disposed of offsite.
- 13) All Project-related parking and equipment storage would be confined to the Project area. Off-site Mohave ground squirrel habitat would not be used for parking or equipment storage. Project-related vehicle traffic would be restricted to established roads, staging, and parking areas. Signs or posting stakes, flags, and/or rope, cord or fencing would be installed as necessary to minimize the disturbance of Mohave ground squirrel habitat. Vehicle speeds would not exceed 20 mph in order to avoid Mohave ground squirrels potentially on roads or traveling through the Project area.
- 14) If a Mohave ground squirrel was found in a burrow during Project-related activities, it would be immediately relocated to a burrow at a protected off-site location approved by the CDFG's Regional Representative. The Mohave ground squirrel would only be relocated by a qualified biologist to a relocation burrow prepared according to CDFG guidelines.
- 15) If a Mohave ground squirrel was injured as a result of Project-related activities, it would be immediately taken to a CDFG-approved wildlife rehabilitation facility. Any costs associated with the care or treatment of such injured Mohave Ground Squirrels would be borne by the Project. The CDFG would be notified immediately unless the incident occurred outside of normal business hours. In that event the CDFG would be notified no later than 12:00 noon on the next business day. Notification to the CDFG would be via telephone or email, followed by a written incident report.
- 16) Agency notification of take would include the date, time, location and circumstances of the incident, and the name of the facility to which the animal was taken.
- 17) If a Mohave ground squirrel was killed by project-related activities during construction, or if a Mohave ground squirrel was otherwise found dead, a written report would be sent to

the CDFG within two (2) calendar days. The report would include the date, time of the finding or incident, location of the carcass, and the circumstances.

- 18) To remedy a violation of issued incidental take permit conditions (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species, any stop-work order issued by the CDFG would be complied with immediately upon receipt thereof.
- 19) Upon Project construction completion, all associated refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes would be removed from the site and properly disposed of.
- 20) No later than 45 days after completion of the Project construction activities, including completion of all mitigation measures, a Final Mitigation Report would be provided to the CDFG. This report would be prepared by the Designated Biologist and would include, at a minimum: 1) a table with notes showing when each of the incidental take permit mitigation measures was implemented; 2) all available information about project-related incidental take of species named in the incidental take permit; 3) information about other Project impacts on the Mohave ground squirrel; 4) construction dates; 5) an assessment of the effectiveness of each mitigation measure in minimizing Project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the Mohave ground squirrel.

8.1.6 Burrowing Owl (*Athene cunicularia*)

Biological surveys in 2006 resulted in documentation of the occurrence of the burrowing owl within one area of Segment 1 as well as areas of the 500-foot buffer zones for Segments 1 and 2 of the electrical transmission line corridor. Specifically, one live owl was observed approximately 300 feet to the west of a portion of the proposed alignment of Segment 1 and two live owls were observed in the immediate vicinity of a portion of Segment 2, one of these was located within approximately 40 feet of a proposed pulling area. Additionally, at least two other live owls were observed outside the requisite 500-foot buffer area required by CDFG, but within the 2,400-foot desert tortoise ZOI. Furthermore, evidence of the past presence of this California-protected raptor within proposed footprint of various areas of the Project site was also documented. No live owls were specifically observed within the project footprint, however older sign (i.e., whitewash, pellets, and feathers in association with onsite burrows) indicative of previous locality use by the species was recorded in several areas. There is also a potential for burrowing owl use in other portions of the proposed Project area, such as areas along Segment 3. For these reasons, offsite habitat compensation for species' habitat impacts and specific impact minimization measures will be required. These measures are outlined below.

To ensure no burrowing owls have established territories onsite between initial surveys and receipt of all Project approvals, preconstruction surveys of suitable habitat at the project site would be conducted within a 30-day period prior to construction. If burrowing owls are identified

onsite, all mitigation measures identified herein would be applied prior to surface disturbance taking place.

Offsite Habitat Compensation

The CDFG requires a minimum of 6.5 acres of foraging habitat permanently protected per pair or unpaired resident birds to offset the associated loss of foraging and burrowing habitat. The protected land would be located adjacent to occupied burrowing owl habitat in a locality acceptable to the CDFG.

An implementation agreement with a mitigation banking and land management entity (e.g., the Desert Tortoise Preserve Committee [DTPC], or other third party entity approved by CDFG) would be secured to acquire 6.5 acres of replacement burrowing owl habitat for each pair/unpaired bird, initially enhance and manage the acquired land over the long term for the benefit of the species.

To compensate for the loss of burrowing owl habitat resulting from project implementation, a total of 19.5 acres of compensatory habitat would be required, per current CDFG direction. To determine the total number of owls affected a focused survey would be conducted for the Project site during the breeding season prior to the start of Project construction.

Habitat Restoration

All burrowing owl habitats temporarily disturbed through Project activities will be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above (Section 8.1.1).

Specific Impact Minimization Measures

- 1) Occupied burrows would not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- 2) A buffer zone of 75 meters around an active nest should be established, appropriately flagged and monitored by a qualified biologist.
- 3) When destruction of occupied burrows is unavoidable, existing unsuitable burrows would be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a ratio of 2:1 on the protected lands site.
- 4) If burrowing owls must be moved away from the disturbance area, passive relocation techniques would be used rather than actual avian trapping. At least one or more weeks would be necessary to accomplish this and allow the birds to acclimate to alternate burrows.
- 5) The Project would provide funding for long-term management and monitoring of the

protected lands acquired for burrowing owl impacts. This monitoring would include an annual report submittal to the CDFG.

8.1.7 Southwestern Pond Turtle

All construction-related activities in the area along the VVWRA treatment ponds would be confined entirely to existing compacted perimeter roads. Treatment ponds, their embankments, and any and all vegetation communities in this specific area would be avoided by the reclaimed water pipeline installation proposed. Additionally, a biological monitor familiar with the species would be present for all activities involving operation of heavy equipment or ground disturbance in this area. The biological monitor would conduct daily clearance surveys along the ROW and vicinity to further ensure that the southwestern pond turtle would not be impacted.

8.1.8 San Diego Coast Horned Lizard

All construction activities would be located outside of washes and drainages, areas that this species is most likely to occur. Additionally, a biological monitor familiar with the species would be present for all activities involving operation of heavy equipment or ground disturbance in this area. The biological monitor would conduct daily clearance surveys along the ROW and vicinity to further ensure that the San Diego coast horned lizards are not be impacted. Individual San Diego coast horned lizards be found within the project site would be relocated to offsite areas away from harm. Upon completion of project activities all temporarily disturbed areas would be revegetated and restored, including the Mojavean juniper woodland and scrub habitat that represents portions of the potentially-suitable habitat for this species on the Project site.

8.1.9 Mojave River Vole

The Project will avoid impacts to onsite washes and drainages that represent this species potentially suitable habitat along the transmission line ROW within Segment 1. For this reason, the Mojave River vole is not expected to occur within the Project site. Nevertheless, should the Mojave River vole be found during construction activities on the project site, these animals would be safely relocated to offsite nearby suitable habitat.

8.1.10 San Emigdio Blue Butterfly

The Project will avoid impacts to the onsite washes and drainages that represent the majority of this species potentially suitable habitat along the transmission line ROW within Segment 1. Upon completion of project activities within the desert saltbush scrub that potentially serves as this species habitat onsite, all temporarily disturbed areas would be revegetated and restored.

8.1.11 Nesting and Migratory Bird Species

In order to comply with the Federal Migratory Bird Treaty Act, any vegetation removal or grading occurring during the nesting season (generally Feb. 1 through Aug. 31) of bird species potentially nesting on the Project (e.g., Le Conte's Thrasher, loggerhead shrike, and Costa's hummingbird) would require at least one nesting bird survey (more if deemed necessary) to be conducted by a qualified Biologist. If no nests are found, construction would proceed. If nests are found, impact avoidance measures would be required.

Project activities occurring in close proximity to the Mojave River corridor, such as portions of the Linear Utility Features, would be scheduled to avoid the nesting season (Feb. 15 – Aug. 31) of the southwestern willow flycatcher, least Bell's vireo, western yellow-billed cuckoo and other special status riparian-nesting species. Biological monitors having experience with these species would be present during operations in these areas to further ensure that impacts to these species do not result. Should it be determined that any of these above-reference species are being impacted or alteration of avian migratory flight patterns be detected, precipitating Project activities would be halted in the area until further impact avoidance measures are determined or for the remainder of the migratory movement.

Common raven nest removal measures recommended for desert tortoise conservation purposes would be conducted with appropriate agency approvals. Such removals would be conducted outside the nesting season.

Specific Impact Minimization Measures

- 1) Planned surface disturbance activities in areas containing suitable nesting substrate would to the extent feasible be scheduled outside of the primary avian nesting season (Feb. 15 – Aug. 31) to avoid impacts to all nesting bird species. Where seasonal avoidance is not feasible, a nesting bird survey would be conducted prior to surface-disturbing activities to ensure no nests would be impacted. If nests were located, a suitable non-disturbance buffer area would be established until such time as nesting birds have left.
- 2) Seasonal avoidance and/or avian use monitoring would be conducted to ensure no alteration of avian flight patterns is precipitated in proximity to the Mojave River corridor by Project activities. Where seasonal avoidance is infeasible, monitoring of avian migratory movements along this corridor would be conducted. Should an alteration of avian migratory flight patterns be detected, precipitating Project activities would be halted for the remainder of the migratory movement.
- 3) Any common raven (*Corvus corax*) nesting incidence encountered during construction, operation or maintenance of the Project would be reported to the appropriate authorities. The integrity of this resource would be maintained pending subsequent investigation and direction by these authorities.
- 4) Common raven nest removal from proposed facilities, when determined necessary in consultation with the USFWS, would occur outside the nesting season.

8.1.12 Jurisdictional Waters

Proposed Project features are currently designed to avoid all federal and state jurisdictional waters. Should aspects of the proposed Project necessitate surface disturbance within these areas, specific offsite habitat compensation and impact minimization measures would be required, as outlined below.

Offsite Habitat Compensation

Should impacts to California streambeds and/or federal waters become necessary during Project activities, affected acreage would be replaced to offset the loss of this acreage. Replacement lands would have intact streambed habitat within their perimeter and would be managed for the long-term protection of this resource.

An implementation agreement with a mitigation banking and land management entity (e.g., the Desert Tortoise Preserve Committee [DTPC], or third party entity approved by CDFG) would be secured to replacement streambed habitat and provide funds to initially enhance this acquired habitat; as well as to manage it over the long term for the benefit of the streambed resource.

Specific Impact Minimization Measures (if necessary)

- 1) Construction and maintenance of access routes would not result in alteration of existing drainage flow patterns. All road shoulder “berms” associated with route construction would be leveled to re-establish original drainage flow patterns.
- 2) All applicable state and federal hazardous materials and waste management laws, along with all implementing regulations. These laws include the Comprehensive Environmental Response, Compensation, and Liability Act; the Resource Conservation and Recovery Act; and the Clean Water Act.
- 3) Appropriate spill containment material would be kept on site and personnel instructed on how to use this equipment. All fuels and other materials used would be contained and equipment/materials stored with appropriate containers. All hazardous materials associated with construction activities would be removed from the site upon completion of construction activities.
- 4) Road installation across washes would be designed to not affect the wash banks or bed; nor utilize culverts.

KEY TO TABLES

- F:** Federal (endangered, threatened, candidate, Migratory Bird Treaty Act [MBTA])
C: California (endangered, threatened, special concern, California Fish and Game Code [F&G Code])
CEQA: mandatory consideration for CEQA
CEQA?: CNPS recommends consideration for CEQA

California Native Plant Society (CNPS) designations:

- List 1B:** Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened or endangered in California but more common elsewhere.
List 3: Plants for which more information is needed.
List 4: Plants of limited distribution; a "watch list."

CA Endemic = Taxa that occur only in California

(Note: According to CNPS [Smith and Berg 1988], plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code.)

CNPS Threat Code:

- .1 - Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- .2 - Fairly endangered in California (20-80% occurrences threatened)
- .3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

Note that all List 1A (presumed extinct in California) and some List 3 (need more information- a review list) plants lacking any threat information receive no threat code extension. Also, these Threat Code guidelines represent a starting point in the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in setting the Threat Code.

Global Rank

The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

- G1** = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres
G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
G4 = Apparently secure; this rank is clearly lower than **G3** but factors exist to cause some concern; e.g. there is some threat, or somewhat narrow habitat
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world

Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety (For example: *Chorizanthe robusta* var. *hartwegii*. This plant is ranked G2T1. The G-rank refers to the whole species range i.e., *Chorizanthe robusta*. The T-rank refers only to the global condition of var. *hartwegii*.)

State Rank

The state rank (S-rank) is a reflection of the overall condition of an element throughout its California range. The number after the decimal point represents a threat designation attached to the S-rank.

- S1** = Less than 6 Element Occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres
S1.1 = very threatened
S1.2 = threatened
S1.3 = no current threats known
S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
S2.1 = very threatened
S2.2 = threatened
S2.3 = no current threats known
S3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres
S3.1 = very threatened
S3.2 = threatened
S3.3 = no current threats known
S4 = Apparently secure within California; this rank is clearly lower than **S3** but factors exist to cause some concern; e.g. there is some threat, or somewhat narrow habitat. NO THREAT RANK.
S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK

GH: All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists, **SH:** All California sites are historical.

GX: All sites are extirpated; this element is extinct in the wild, **SX:** All California sites are extirpated.

GXC: Extinct in the wild; exists in cultivation.

G1Q: The element is very rare, but there are taxonomic questions associated with it.

T Rank applies to a subspecies or variety

KEY TO TABLES (CONTINUED)

CNPS R-E-D Code (Pre-2006 CNPS ranking system. Replaced by "Threat Code" [See above]):

- Rarity 1:** Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.
2: Occurrence confined to several populations or one extended population.
3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

- Endangerment 1:** Not endangered.
2: Endangered in a portion of its range.
3: Endangered throughout its range.

- Distribution 1:** More or less widespread outside California.
2: Rare outside California.
3: Endemic to California (i.e., does not occur outside California).

Audubon: WatchList: WatchList species are those facing population declines and/or threats such as habitat loss on their breeding and wintering grounds, or with limited geographic ranges. The WatchList is a science-based system that focuses attention on at-risk bird species so that limited resources are spent where they are most needed. More information is available at: <http://www.audubon.org/bird/watchlist/index.html>.

United States Bird Conservation (USBC): Watch List:

The United States Bird Conservation Watch List. Includes the Partners in Flight (PIF) Watch List, the United States Shorebird Conservation Plan Watch List, and the Waterbird Conservation for the Americas Watch List. This combined watch list is available through the American Bird Conservancy at: <http://www.abcbirds.org/watchlist/index.htm>. Information on Partners in Flight is available at: <http://www.partnersinflight.org/>. Information on the United States Shorebird Conservation Plan is available at: <http://shorebirdplan.fws.gov/>. Information on the North American Waterbird Conservation Plan is available at: <http://www.pwrc.usgs.gov/nacwcp/testarea/nacwcp/pubs/continentalplan.cfm>.

American Bird Conservancy (ABC): Green List:

The American Bird Conservancy Green List contains all the highest priority birds for conservation in the continental United States and Canada. It builds on the species assessments conducted for many years by Partners in Flight (PIF) for land birds and expands it to include shorebirds, waterbirds and waterfowl. The list is available at: <http://www.abcbirds.org/greenlist.htm>.

Definitions of occurrence probability:

- Occurs:** Observed on the site by AMEC biologists, or recorded on-site by other qualified biologists.
High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.
Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.
Absent: A focused study failed to detect the species, no suitable habitat is present, or the location is outside the species range
Unknown: Distribution and habitat use has not been clearly determined.

9.0 CONCLUSION

General biological surveys and biotic inventories, including focused surveys for the federally-listed Desert Tortoise, state-listed Mohave Ground Squirrel and state-protected Burrowing Owl, were conducted throughout the affected area of the proposed VV2 Project and site vicinity (i.e., within the planned disturbance footprint and Zone of Influence). These efforts detected the Desert Tortoise, Burrowing Owl and various migratory bird species both on and adjacent to the Project site. Although focused small mammal trapping did not detect any Mohave Ground Squirrel, the Project proponent has elected to assume presence of this state-listed species based on the presence of potentially suitable habitat in the Project area.

Implementation of the proposed VV2 Project would result in a permanent loss of 342 acres of occupied or otherwise suitable Desert Tortoise habitat. The temporary loss of 59 acres of suitable Desert Tortoise habitat is also anticipated. A like amount of presumed-occupied Mohave Ground Squirrel habitat (i.e., 342 acres), would be permanently lost and 59 acres temporary habitat loss would also result. In addition, a subset of this affected acreage is used periodically by at least three Burrowing Owls, an unknown number of Le Conte's Thrasher and Loggerhead Shrike, as well as a few other migratory bird species. A permanent loss of this avian habitat would also be expected as a result of the Proposed Action. Appropriate mitigation measures and habitat loss replacement (compensation) programs for impacts resulting from the proposed VV2 Project are provided in this report.

A Biological Assessment (BA) currently is being prepared to facilitate ESA Section 7 consultation between the EPA and the USFWS on anticipated VV2 Project impacts to the federally-listed Desert Tortoise. The CDFG is anticipated to concur with the Biological Opinion (BO) issued by the USFWS pursuant to CESA Section 2080.1 to satisfy CESA permitting requirements for the Desert Tortoise, which is also a state-listed species. This BA also will be used to facilitate CESA Section 2081 incidental "take" permitting by the CDFG for the state-listed Mohave Ground Squirrel. Mitigation measures and/or conservation recommendations in addition to those proposed in the BA may be identified by the EPA, the USFWS and/or the CDFG.

Issuance of a ESA Section 7 BO by the USFWS, and CESA Section 2080.1 concurrence and a CESA Section 2081 incidental "take" permit by CDFG, would be required for authorization of the Proposed Action. Terms and conditions outlined in the BO, measures specified in the "Mitigation and Monitoring Program" (MMRP) included in the CESA Section 2081 incidental "take" permit, and any specific conditions of approval identified by any of the state and federal permitting agencies, would be binding on the proposed VV2 Project and together would fully mitigate all anticipated biological resource impacts to a less than significant level.

10.0 PERSONS AND AGENCIES CONSULTED

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APPENDIX 1

Victorville 2 Hybrid Power Project

MAPS FOR THE VICTORVILLE 2 HYBRID POWER PROJECT

APPENDIX 2

Victorville 2 Hybrid Power Project

REPRESENTATIVE SITE PHOTOS FOR THE VICTORVILLE 2 HYBRID POWER PROJECT

APPENDIX 3

Victorville 2 Hybrid Power Project

ELECTRICAL TRANSMISSION LINE TOWER DISTURBANCE DRAWINGS AND FIGURES

APPENDIX 4

Victorville 2 Hybrid Power Project

OBSERVED PLANT SPECIES LIST FOR THE VICTORVILLE 2 HYBRID POWER PROJECT

APPENDIX 4

Vascular Plants Observed on Victorville 2 Hybrid Power Project, City of Victorville, San Bernardino County, California

This list reports only the plants observed on this site by this study. Other species may have been overlooked or undetectable due to their growing/activity season. Plants were identified from keys, descriptions and drawings in Hickman (ed.) 1993, and Munz 1974. Some specimens were identified or confirmed by Andrew C. Sanders (UC Riverside Herbarium). Unless noted otherwise, nomenclature and systematics follows Hickman (ed.) 1993.

SYMBOLS AND ABBREVIATIONS:

- * Non-native (introduced) species.
 - ** Sensitive species (see text).
 - cf.* Uncertain identification, but plant specimen "compares favorably" to named species (from Latin *confer.* compare [with]).
 - sp.* Identified only to genus; species unknown (plural = spp.).
-

CONIFERAE

CONE BEARING PLANTS

GNETAE

JOINT FIRS

Cupressaceae

Juniperus californica

Cypress Family

California juniper

Ephedraceae

Ephedra nevadensis

Ephedra Family

Nevada joint fir

ANGIOSPERMAE

DICOT FLOWERING PLANTS

DICOTYLEDONEAE

Amaranthaceae

Amaranthus sp.

Amaranth Family

Identified to genus only

Apiaceae

Lomatium mohavense

Carrot Family

Mojave lomatium

Asteraceae

Acamptopappus sphaerocephalus

Sunflower Family

rayless goldenhead

<i>Ambrosia acanthicarpa</i>	burweed
<i>Ambrosia dumosa</i>	burrobush
<i>Artemisia tridentate</i>	big sagebrush
<i>Aster subulatus</i>	No common name
<i>Brickellia cf. desertorum</i>	No common name
<i>Chaenactis fremontii</i>	desert pincushion
<i>Chrysothamnus nauseosus</i>	rabbitbrush
<i>Conyza canadensis</i>	horseweed
<i>Ericameria cooperi</i>	Cooper's goldenbush
<i>Ericameria linearifolia</i>	interior goldenbush
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy
<i>Filago</i> sp.	Identified to genus only
* <i>Gnaphalium luteoalbum</i>	No common name
<i>Gutierrezia</i> sp.	Identified to genus only
<i>Helianthus annuus</i>	annual sunflower
<i>Heterotheca grandiflora</i>	telegraph weed
<i>Hymenoclea salsola</i>	cheesebush
* <i>Lactuca serriola</i>	Prickly Lettuce
<i>Lessingia lemmonii</i>	No common name
<i>Malacothrix glabrata</i>	desert dandelion
<i>Senecio flaccidus</i>	No common name
* <i>Sonchus oleraceus</i>	common sow thistle
<i>Stephanomeria exigua</i>	No common name
<i>Tetradymia stenolepis</i>	Mojave cottonthorn
<i>Tetradymia cf. spinosa</i> or <i>axillaris</i>	Identified to genus, uncertain species

Bignoniaceae

Chilopsis linearis

Bignonia Family

desert willow

Boraginaceae

Amsinckia tessellata
Cryptantha micrantha var. *micrantha*
Cryptantha pterocarya
Pectocarya linearis
Pectocarya penicillata
Pectocarya platycarpa

Borage Family

checkered fiddleneck
purple-root cryptantha
wingnut cryptantha
pectocarya
sleeping combseed
broadfruit combseed

Brassicaceae

**Brassica tournifortii*
Descurainia pinnata
**Hirschfeldia incana*
**Sisymbrium altissimum*
Streptanthella longirostris

Mustard Family

Sahara mustard
tansy mustard
short-pod mustard
tumble mustard
longbeak streptanthella

Cactaceae

Cactus Family

Opuntia basilaris
Opuntia echinocarpa
**Opuntia ficus-indica*
Opuntia ramossissima

beavertail cactus
silver cholla
Indian fig
pencil cholla

Caryophyllaceae

Loeflingia squarrosa

Pink Family

No common name

Chenopodiaceae

Atriplex canescens
Atriplex confertifolia
Atriplex polycarpa
**Atriplex semibaccata*
Atriplex spinifera
Krascheninnikovia lanata
**Salsola tragus*

Goosefoot Family

four-winged saltbush
shadscale
all scale
Australian saltbush
spine scale
winter fat
Russian thistle

Cuscutaceae

Cuscuta denticulata

Dodder Family

dodder

Euphorbiaceae

Chamaesyce albomarginata
Croton californica
Eremocarpus setigerus
Stillingia linearifolia

Spurge Family

rattlesnake spurge
California croton
dove weed
narrow-leaved stillingia

Fabaceae

Astragalus lentiginosus var. *fremontii*
Lotus scoparius

Pea Family

freckled milkvetch
California broom

Geraniaceae

**Erodium cicutarium*

Geranium Family

red-stemmed filaree

Hydrophyllaceae

Eriodictyon trichocalyx
Nama demissum

Waterleaf Family

No common name
desert nama

Lamiaceae

**Marrubium vulgare*
Salazaria mexicana
Salvia carduacea
Salvia columbariae
Salvia dorrii

Mint Family

horehound
paperbag bush
thistle-sage
chia
desert sage, purple sage

Loasaceae

Petalonyx thurberi

Loasa Family

sandpaper plant

Malvaceae

Eremalche exilis

Nyctaginaceae

Abronia pognantha

Abronia villosa

Mirabilis bigelovii

Onagraceae

Camissonia boothii ssp. *desertorum*

Camissonia brevipes

Camissonia campestris

Camissonia claviformis

Camissonia pallida

Oenothera deltoides

Oenothera primaverais

Papaveraceae

Dendromecon rigida

Eschscholtzia minutiflora

Polemoniaceae

Eriastrum sapphirinum

Loeseliastrum matthewsii

Polygonaceae

Chorizanthe brevicornu

Chorizanthe thurberi

Eriogonum convilleanum

Eriogonum davidsonii

Eriogonum fasciculatum

Eriogonum inflatum

Eriogonum plumatella

Rumex hymenosepalus

Rhamnaceae

Rhamnus ilicifolia

Rosaceae

Prunus fasciculata

Salicaceae

Populus fremontii

Salix exigua

Mallow Family

white mallow

Four O' Clock Family

Mojave sand verbena

desert sand verbena

wishbone bush

Evening Primrose Family

desert sun cup

yellow cups

Mojave sun cup

brown-eyed primrose

white evening primrose

devil's lantern

desert evening primrose

Poppy Family

bush poppy

little gold poppy

Phlox Family

sapphire woollystar

desert calico

Buckwheat Family

brittle spineflower

Thurber's spineflower

No common name

No common name

California buckwheat

desert trumpet

flat-topped buckwheat

wild-rhubarb

Buckthorn Family

holly-leaf redberry

Rose Family

desert almond

Willow Family

Fremont cottonwood

narrow-leaved willow

Scrophulariaceae

Castilleja sp.

Solanaceae

Datura wrightii

Lycium andersonii

Lycium cooperi

* *Nicotiana glauca*

Solanum sp.

Tamaricaceae

**Tamarix ramosissima*

Ulmaceae

**Ulmus pumila*

Viscaceae

Phoradendron densum

Zygophyllaceae

Larrea tridentata

MONOCOTYLEDONEAE**Liliaceae**

Yucca brevifolia

Poaceae

Achnatherum hymenoides

Achnatherum speciosum

**Bromus diandrus*

**Bromus madritensis* var. *rubens*

**Bromus tectorum*

**Cynodon dactylon*

Elymus elmoides

**Schismus barbatus*

Figwort Family

Identified to genus only

Nightshade Family

Jimson weed

Anderson desert-thorn

peach-thorn

tree tobacco

Identified to genus only

Tamarix Family

salt cedar, tamarix

Elm Family

Siberian elm

Mistletoe Family

dense mistletoe

Caltrop Family

creosote bush

MONOCOT FLOWERING PLANTS**Lily Family**

Joshua tree

Grass Family

Indian ricegrass

desert needlegrass

rip-cut grass

red brome

cheat grass

Bermuda grass

squirreltail

Mediterranean schismus

APPENDIX 5

Victorville 2 Hybrid Power Project

OBSERVED VERTEBRATE SPECIES LIST FOR THE VICTORVILLE 2 HYBRID POWER PROJECT

APPENDIX 5

Vertebrates Observed on Victorville 2 Hybrid Power Project, City of Victorville, San Bernardino County, California

This list reports only plants and animals observed on or adjacent to the site while conducting field activities (i.e., surveys and monitoring) for this Project. Other species may have been overlooked or undetectable due to their activity season.

Nomenclature and taxonomy for fauna observed on site follows Stebbins (1985) and Collins (1990) for herpetofauna, American Ornithologists' Union Checklist (1983 and supplements) for avifauna, and Laudenslayer *et al.* (1991) for mammals.

SYMBOLS AND ABBREVIATIONS:

- * Non-native (introduced) species.
 - ** Sensitive species (see text).
 - cf.* Uncertain identification, but plant specimen "compares favorably" to named species (from Latin *confer.* compare [with]).
 - sp.* Identified only to genus; species unknown (plural = spp.).
-

HERPETOFAUNA

TESTUDINES

Testudinidae

***Gopherus agassizii*

SQUAMATA

Crotaphytidae

Crotaphytus wislizenii

Iguanidae

Sceloporus magister

Sceloporus occidentalis

Uta stansburiana

Phrynosomatidae

Callisaurus draconoides

REPTILES & AMPHIBIANS

TURTLES

Land Tortoises

desert tortoise

LIZARDS & SNAKES

Collared and Leopard Lizards

long-nosed leopard lizard

Iguanids

desert spiny lizard

western fence lizard

side-blotched lizard

Spiny Lizards & Relatives

zebra-tailed lizard

Phrynosoma platyrhinos

desert horned Lizard

Teiidae

Aspidoscelis (Cnemidophorus) tigris tigris

Whiptails & Racerunners

Great Basin whiptail

Xantusiidae

Xantusia vigilis

Night Lizards

Yucca night lizard

Coluberidae

Arizona elegans

Masticophis flagellum piceus

Pituophis catenifer deserticola

Colubrids

glossy snake

coachwhip

Great Basin gopher snake

Viperidae

Crotalus cerastes

Crotalus scutulatus

Vipers

sidewinder

Mojave rattlesnake

AVIFAUNA

BIRDS

Anatidae

Aix sponsa

Anas strepera

Anas americana

Anas platyrhynchos

Anas cyanoptera

Anas clypeata

Anas crecca

Aythya americana

Aythya collaris

Aythya affinis

Bucephala albeola

Oxyura jamaicensis

Swans, Geese, and Ducks

wood duck

gadwall

American wigeon

mallard

cinnamon teal

northern shoveler

green-winged teal

redhead

ring-necked duck

lesser scaup

bufflehead

ruddy duck

Odontophoridae

Callipepla californica

New World Quail

California quail

Podicipedidae

Podilymbus podiceps

Podiceps nigricollis

Grebes

pied-billed grebe

eared grebe

Ardeidae

Ardea alba

Hérons and Egrets

great egret

Cathartidae

Cathartes aura

Vultures

turkey vulture

Accipitridae

***Pandion haliaetus*
***Circus cyaneus*
Buteo jamaicensis
***Buteo swainsoni*
***Haliaeetus leucocephalus*
Accipiter striatus
***Accipter cooperii*

Falconidae

***Falco mexicanus*
Falco sparverius

Rallidae

Fulica americana

Charadriidae

Charadrius vociferus

Recurvirostridae

Himantopus mexicanus

Scolopacidae

Tringa melanoleuca
Actitis macularius
Calidris mauri
Calidris minutilla

Laridae

Larus delawarensis
Larus californicus

Columbidae

Columba livia
Zenaida macroura

Cuculidae

Geococcyx californianus

Strigidae

***Athene cunicularia*

Tytonidae

Tyto alba

Hawks, Old World Vultures, Harriers

osprey
northern harrier
red-tailed hawk
Swainson's hawk
bald eagle
sharp-shinned hawk
Cooper's hawk

Caracaras and Falcons

prairie falcon
American kestrel

Rails, Gallinules, and Coots

American coot

Plovers and Relatives

killdeer

Stilts and Avocets

black-necked stilt

Sandpipers

greater yellowlegs
spotted sandpiper
western sandpiper
least sandpiper

Skuas, Gulls, Terns, and Skimmers

ring-billed gull
California gull

Pigeons and Doves

rock pigeon
mourning dove

Cuckoos, Roadrunners, and Anis

greater roadrunner

Typical Owls

burrowing owl

Barn Owls

barn owl

Caprimulgidae

Chordeiles acutipennis

Apodidae

***Chaetura vauxi*

Aeronautes saxatalis

Trochilidae

Archilochus alexandri

Calypte anna

***Calypte costae*

***Selasphorus rufus*

Picidae

***Picoides nuttallii*

Picoides pubescens

Picoides scalaris

Colaptes auratus

Tyrannidae

Contopus sordidulus

Empidonax hammondii

Empidonax difficilis/occidentalis

Sayornis nigricans

Sayornis saya

Myiarchus cinerascens

Tyrannus vociferans

Tyrannus verticalis

Laniidae

***Lanius ludovicianus*

Corvidae

Corvus corax

Alaudidae

Eremophila alpestris

Hirundinidae

Hirundo rustica

Petrochelidon pyrrhonota

Stelgidopteryx serripennis

Tachycineta bicolor

Tachycineta thalassina

Remizidae**Goatsuckers**

lesser nighthawk

Swifts

Vaux's swift

white-throated swift

Hummingbirds

black-chinned hummingbird

Anna's hummingbird

Costa's hummingbird

rufous hummingbird

Woodpeckers and Allies

Nuttall's woodpecker

downy woodpecker

ladder-backed woodpecker

Northern Flicker

Tyrant Flycatchers

western wood-pewee

Hammond's flycatcher

"western" flycatcher

black phoebe

Say's phoebe

ash-throated flycatcher

Cassin's kingbird

western kingbird

Shrikes

loggerhead shrike

Jays, Magpies, and Crows

common raven

Larks

horned lark

Swallows

barn swallow

cliff swallow

northern rough-winged swallow

tree swallow

violet-green swallow

Verdin

Auriparus flaviceps

verdin

Aegithalidae

Psaltriparus minimus

Long-tailed Tits and Bushtits

bushtit

Troglodytidae

Campylorhynchus brunneicapillus

Thryomanes bewickii

Troglodytes aedon

Wrens

cactus wren

Bewick's wren

house wren

Regulidae

Regulus calendula

Kinglets

ruby-crowned kinglet

Sylviidae

Polioptila caerulea

Old World Warblers and Gnatcatchers

blue-gray gnatcatcher

Turdidae

Sialia mexicana

Catharus guttatus

Solitaires, Thrushes, and Allies

western bluebird

hermit thrush

Mimidae

Mimus polyglottos

Oreoscoptes montanus

***Toxostoma lecontei*

***Toxostoma redivivum*

Mockingbirds and Thrashers

northern mockingbird

sage thrasher

Le Conte's thrasher

California thrasher

Sturnidae

Sturnus vulgaris

Starlings

European starling

Motacillidae

Anthus rubescens

Wagtails and Pipits

American pipit

Ptilonotidae

Phainopepla nitens

Silky-flycatchers

phainopepla

Parulidae

Vermivora celata

Dendroica coronata

Dendroica nigrescens

***Dendroica occidentalis*

Geothlypis trichas

Wilsonia pusilla

Wood-Warblers

orange-crowned warbler

yellow-rumped warbler

black-throated gray warbler

hermit warbler

common yellowthroat

Wilson's warbler

Thraupidae

Piranga ludoviciana

Tanagers

western tanager

Emberizidae

***Spizella passerina*
Chondestes grammacus
***Spizella breweri*
Amphispiza belli
Amphispiza bilineata
Passerculus sandwichensis
Melospiza melodia
Zonotrichia leucophrys
Zonotrichia atricapilla

Icteridae

Agelaius phoeniceus
Sturnella neglecta
Euphagus cyanocephalus
Molothrus ater
Icterus bullockii

Fringillidae

Carpodacus mexicanus
Carduelis psaltria
***Carduelis lawrencei*
Carduelis tristis

Passeridae

Passer domesticus

MAMMALS

Leporidae

Lepus californicus
Sylvilagus audubonii

Sciuridae

Ammospermophilus leucurus

Geomyidae

Thomomys bottae

Heteromyidae

Perognathus longimembris
Dipodomys merriami
Dipodomys panamintinus

Muridae

Neotoma lepida

Emberizines

chipping sparrow
 lark sparrow
 Brewer's sparrow
 sage sparrow
 black-throated sparrow
 savannah sparrow
 song sparrow
 white-crowned sparrow
 golden-crowned sparrow

Blackbirds and Allies

red-winged blackbird
 western meadowlark
 Brewer's blackbird
 brown-headed cowbird
 Bullock's oriole

Fringilline and Cardueline Finches

house finch
 lesser goldfinch
 Lawrence's goldfinch
 American goldfinch

Old World Sparrows

house sparrow

Rabbits and Hares

black-tailed jackrabbit
 Audubon's cottontail

Squirrels

white-tailed antelope squirrel

Pocket Gophers

Botta's pocket gopher

Hereromyid Rodents

little pocket mouse
 Merriam's kangaroo rat
 Panamint kangaroo rat

Rats, Mice, and Voles

desert woodrat

Onychomys torridus ramona

southern grasshopper mouse

Canidae

Canis latrans

Vulpes macrotis

Foxes, Wolves, Coyotes

coyote

kit fox

APPENDIX 6

Victorville 2 Hybrid Power Project

SURVEY FORMS FOR PRESENCE-OR-ABSENCE AND CLEARANCE SURVEYS FOR DESERT TORTOISE SIGN

APPENDIX 7

Victorville 2 Hybrid Power Project

CALIFORNIA NATURAL DIVERSITY DATA BASE SENSITIVE SPECIES FORMS

APPENDIX 8

Victorville 2 Hybrid Power Project

QUALIFICATIONS OF INDIVIDUALS CONDUCTING STUDIES

APPENDIX 9

Victorville 2 Hybrid Power Project

FOCUSED TRAPPING SURVEY FOR MOJAVE GROUND SQUIRREL

APPENDIX 10

Victorville 2 Hybrid Power Project

**PRELIMINARY DETERMINATION of JURISDICTONAL LIMITS U.S. ARMY CORPS of
ENGINEERS SECTION 404 WATERS of the UNITED STATES INCLUDING WETLANDS and
STATE WATERS SUBJECT TO CALIFORNIA DEPARTMENT of FISH and GAME SECTION
1602 STREAMBED ALTERATION AGREEMENT**

APPENDIX B

Representative Site Photographs



Photo 1. Abandoned residence and associated trash in proposed solar farm.



Photo 2. Off-road vehicle trails through proposed solar farm.



Photo 3. Steep hills in southern section of the proposed gen-tie line.



Photo 4. Mojave creosote bush scrub and desert saltbush scrub in proposed gen-tie line.



Photo 5. Water detention basins associated with the sewage treatment facility.



Photo 6. Area west of water detention basins along the proposed gen-tie line.



Photo 7. Mojave creosote bush scrub in southern section of the gen-tie line.



Photo 8. Mojave creosote bush scrub with Joshua trees in southern section of the Project site.



Photo 9. Old landfill south of George Air Force Base within the proposed gen-tie line.



Photo 10. Steep terrain of Mojave creosote bush scrub within northern portion of proposed gen-tie line.



Photo 11. Adult female tortoise at mouth of burrow along the proposed gen-tie line west of the Victor Valley Wastewater facility.



Photo 12. Class 1 burrow, with desert tortoise inside.



Photo 13. Class 2 desert tortoise scat.



Photo 14. Class 2 burrow, with no recent sign of desert tortoise.



Photo 15. Disarticulated and scattered Class 5 desert tortoise carcass located south of the solar field portion of the Project.

Scientific Name	Common Name	2017	2018
VASCULAR PLANTS			
GYNOSPERMS (GNETALES)			
EPHEDRACEAE	EPHEDRA FAMILY		
<i>Ephedra nevadensis</i>	Nevada jointfir	X	X
<i>Ephedra viridis</i>	mormon tea	X	
<i>Ephedra sp.</i> *	Ephedra		X
ANGIOSPERMS (EUDICOTS)			
APIACEAE	CARROT FAMILY		
<i>Lomatium mohavense</i>	Mojave lomatium	X	
APOCYNACEAE	DOGBANE FAMILY		
<i>Asclepias fascicularis</i>	whorled milkweed	X	
ASTERACEAE	SUNFLOWER FAMILY		
<i>Acamptopappus sphaerocephalus</i> *	golden head	X	X
<i>Adenophyllum cooperi</i>	Cooper's dogweed	X	X
<i>Ambrosia ancanthicarpa</i> *	annual bur-sage	X	X
<i>Ambrosia dumosa</i> *	burrobush	X	X
<i>Ambrosia salsola</i> *	cheesebush	X	X
<i>Artemisia dracunculus</i>	wild tarragon	X	
<i>Baccharis salicifolia</i>	mulefat	X	
<i>Calycoseris parryi</i>	yellow tackstem	X	
<i>Centaurea solstitialis</i> *	yellow starthistle	X	
<i>Chaenactis fremontii</i>	Fremont's pincushion	X	
<i>Chaenactis sp.</i>	pincushion		X
<i>Chaenactis xantiana</i>	fleshy pincushion	X	
<i>Chaenactis stevioides</i>	desert pincushion	X	
<i>Dicoria canescens</i>	desert dicoria	X	X
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy	X	
<i>Ericameria cooperi</i>	Cooper's goldenbush	X	
<i>Ericameria nauseosa</i>	rubber rabbitbrush	X	X
<i>Lasthenia californica</i> subsp. <i>californica</i>	California goldfields	X	
<i>Lasthenia gracilis</i>	needle goldfields	X	
<i>Layia glandulosa</i>	white tidy tips	X	
<i>Leptosyne californica</i>	California coreopsis	X	
<i>Lessingia glandulifera</i> var. <i>peirsonii</i>	Peirson's lessingia	X	X
<i>Logfia depressa</i>	dwarf cottonrose	X	
<i>Malacothrix glabrata</i>	desert dandelion	X	
<i>Malacothrix coulteri</i>	snake's head	X	
<i>Rafinesquia neomexicana</i>	New Mexico plumeseed	X	
<i>Senecio flaccidus</i>	shrubby ragwort	X	
<i>Stephanomeria parryi</i>	Parry's wirelettuce	X	X
<i>Stephanomeria pauciflora</i>	desert straw	X	X
<i>Tetradymia stenolepis</i>	Mojave cottonthorn	X	X
BORAGINACEAE	BORAGE FAMILY		
<i>Amsinckia tessellata</i>	bristly fiddleneck	X	
<i>Amsinckia sp.</i> *	fiddleneck		X
<i>Cryptantha circumcissa</i>	cushion cryptantha	X	
<i>Cryptantha dumetorum</i>	bush loving cryptantha	X	
<i>Cryptantha micrantha</i>	purple root cryptantha	X	
<i>Cryptantha nevadensis</i>	Nevada cryptantha	X	
<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>	wingnut cryptantha	X	
<i>Heliotropium curassavicum</i>	salt heliotrope	X	
<i>Nama demissa</i>	purplemat	X	
<i>Pectocarya linearis</i> subsp. <i>ferocula</i>	slender pectocarya	X	
<i>Pectocarya penicillata</i>	winged combseed	X	
<i>Pectocarya setosa</i>	moth combseed	X	
<i>Phacelia crenulata</i> var. <i>ambigua</i>	heliotrope phacelia	X	
<i>Phacelia fremontii</i>	Fremont's phacelia	X	
<i>Tiquilia plicata</i>	fanleaf crinklemat	X	X
BRASSICACEAE	MUSTARD FAMILY		
<i>Brassica nigra</i> *	black mustard	X	
<i>Brassica sp.</i> *	mustard		X

Scientific Name	Common Name		
BRASSICACEAE (continued)	MUSTARD FAMILY (continued)		
<i>Brassica tournefortii</i> *	Saharan mustard	X	
<i>Caulanthus</i> sp.	jewelflower		X
<i>Descurainia sophia</i> **	flix weed	X	X
<i>Descurainia</i> sp.	mustard		X
<i>Dithyrea californica</i>	California shieldpod	X	
<i>Hirschfeldia incana</i> *	short podded mustard	X	
<i>Lepidium flavum</i>	yellow pepperweed	X	
<i>Lepidium lasiocarpum</i>	shaggyfruit pepperweed	X	
<i>Lepidium</i> sp.†	pepperweed		X
<i>Sisymbrium altissimum</i> *	tumble mustard	X	
<i>Sisymbrium irio</i> *	London rocket	X	
<i>Streptanthella longirostris</i>	long beaked twist flower	X	X
CACTACEAE	CACTUS FAMILY		
<i>Cylindropuntia echinocarpa</i> †	Wiggins' cholla	X	X
<i>Cylindropuntia ramosissima</i> †	branched pencil cholla	X	X
<i>Opuntia basilaris</i> var. <i>basilaris</i>	beavertail cactus	X	X
CHENOPODIACEAE	GOOSEFOOT FAMILY		
<i>Atriplex canescens</i>	fourwing saltbrush	X	X
<i>Atriplex polycarpa</i>	allscale	X	X
<i>Grayia spinosa</i>	hopsage	X	
<i>Krashennikovia lanata</i>	winter fat	X	X
<i>Salsola tragus</i> **	Russian thistle	X	X
CUCURBITACEAE	GOURD FAMILY		
<i>Cucurbita palmata</i>	coyote gourd	X	
EUPHORBIACEAE	SPURGE FAMILY		
<i>Croton californicus</i> †	desert croton	X	X
<i>Euphorbia albomarginata</i>	whitemargin sandmat	X	
<i>Euphorbia</i> sp.	spurge		X
<i>Stillingia paucidentata</i>	Mojave toothleaf	X	X
FABACEAE	LEGUME FAMILY		
<i>Astragalus didymocarpus</i> var. <i>dispermus</i>	notch leaved locoweed	X	
<i>Astragalus lentiginosus</i> var. <i>variabilis</i>	freckled milkvetch	X	
<i>Astragalus</i> sp.	milkvetch		X
<i>Glycyrrhiza</i> cf. <i>lepidota</i>	wild licorice	X	
<i>Lupinus bicolor</i>	bicolored lupine	X	
<i>Lupinus odoratus</i>	Mojave lupine	X	
<i>Parkinsonia florida</i>	blue paloverde		X
<i>Psoralea argophylla</i> sp.†	indigo bush		X
<i>Psoralea argophylla</i> var. <i>minutifolia</i>	little leaved mojave indigo bush	X	X
<i>Senna covesii</i> (CNPS Rank 2B.2)	Coves' cassia	X	X
GERANIACEAE	GERANIUM FAMILY		
<i>Erodium cicutarium</i> **	redstem stork's bill	X	X
LAMIACEAE	MINT FAMILY		
<i>Scutellaria mexicana</i> †	bladder sage	X	X
LOASACEAE	LOASA FAMILY		
<i>Mentzelia albicaulis</i>	whitestem blazingstar	X	
<i>Mentzelia</i> sp.†	blazingstar		X
<i>Mentzelia veatchiana</i>	Veatch's blazingstar	X	
MALVACEAE	MALLOW FAMILY		
<i>Eremalche exilis</i>	white mallow	X	
<i>Sphaeralcea ambigua</i>	apricot mallow	X	
MELANTHIACEAE	BUNCHFLOWER FAMILY		
<i>Toxicoscordion brevibracteatum</i>	desert death camas	X	
MELIACEAE	MAHOGANY FAMILY		
<i>Melia azedarach</i> *	China berry tree	X	
MONTIACEAE	MINER'S LETTUCE FAMILY		
<i>Calyptidium monandrum</i>	pussy paws	X	

Scientific Name	Common Name		
MYRTACEAE	MYRTLE FAMILY		
<i>Eucalyptus</i> sp.*	eucalyptus	X	
NYCTAGINACEAE	FOUR O'CLOCK FAMILY		
<i>Abronia villosa</i> var. <i>villosa</i>	desert sand verbena	X	
<i>Mirabilis laevis</i> var. <i>retrorsa</i>	desert four o'clock	X	
ONAGRACEAE	EVENING PRIMROSE FAMILY		
<i>Camissonia campestris</i> subsp. <i>campestris</i>	Mojave sun cups	X	
<i>Chylismia claviformis</i>	clavate fruited primrose	X	
<i>Chylismia</i> sp.	primrose		X
<i>Eremothera boothii</i> subsp. <i>condensata</i>	evening-primrose		X
<i>Eremothera boothii</i> subsp. <i>desertorum</i>	Booth's desert suncup	X	
<i>Oenothera californica</i> subsp. <i>californica</i>	California evening primrose	X	
<i>Oenothera</i> cf. <i>deltoides</i> ⁺	birdcage evening primrose	X	X
PAPAVERACEAE	POPPY FAMILY		
<i>Eschscholzia californica</i>	California poppy	X	
<i>Eschscholzia minutiflora</i> subsp. <i>minutiflora</i>	pygmy poppy	X	
POLEMONIACEAE	PHLOX FAMILY		
<i>Eriastrum eremicum</i> subsp. <i>eremicum</i>	desert wool star	X	
<i>Eriastrum</i> sp.	woolly star		X
<i>Gilia minor</i>	little gilia	X	
<i>Gilia</i> sp.	gilia		X
<i>Linanthus dichotomus</i> subsp. <i>dichotomus</i>	evening snow	X	
<i>Linanthus parryae</i>	sandblossoms	X	
<i>Loeseliastrum matthewsii</i>	desert calico	X	
<i>Loeseliastrum schottii</i>	Schott's calico	X	
<i>Loeseliastrum</i> sp.	calico		X
POLYGONACEAE	BUCKWHEAT FAMILY		
<i>Centrostegia thurberi</i>	Thurber's spineflower	X	
<i>Chorizanthe brevicornu</i> var. <i>brevicornu</i>	brittle spineflower	X	X
<i>Chorizanthe rigida</i>	rigid spiny herb	X	
<i>Eriogonum brachypodum</i>	Parry's buckwheat	X	
<i>Eriogonum elongatum</i>	longstem buckwheat	X	
<i>Eriogonum fasciculatum</i>	California buckwheat	X	X
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	eastern Mojave buckwheat	X	X
<i>Eriogonum gracillimum</i>	rose and white buckwheat	X	X
<i>Eriogonum inflatum</i>	desert trumpet	X	X
<i>Eriogonum maculatum</i> ⁺	spotted buckwheat		X
<i>Eriogonum nidularium</i>	whisk broom	X	
<i>Eriogonum pusillum</i>	yellow turbans	X	
<i>Eriogonum reniforme</i>	kidneyleaf buckwheat		X
<i>Eriogonum</i> sp. ⁺	buckwheat		X
<i>Oxytheca perfoliata</i>	roundleaf oxytheca	X	
<i>Rumex hymenosepalus</i>	canaigre dock	X	X
SOLANACEAE	NIGHTSHADE FAMILY		
<i>Datura wrightii</i>	jimsonweed	X	
<i>Lycium andersonii</i> ⁺	water jacket	X	X
<i>Lycium cooperi</i> ⁺	peach thorn	X	X
TAMARICACEAE	TAMARISK FAMILY		
<i>Tamarix aphylla</i> [*]	athel tamarisk	X	
ZYGOPHYLLACEAE	CALTROP FAMILY		
<i>Larrea tridentata</i> ⁺	South American creosote bush	X	X
<i>Tribulus terrestris</i> [*]	puncture vine	X	
ANGIOSPERMS (MONOCOTS)			
AGAVACEAE	CENTURY PLANT FAMILY		
<i>Yucca brevifolia</i> ⁺	Joshua tree	X	X
THEMIDACEAE	BRODIAEA FAMILY		
<i>Dichelostemma capitatum</i>	school bells	X	
POACEAE	GRASS FAMILY		
<i>Bromus diandrus</i> [*]	ripgut brome	X	
<i>Bromus madritensis</i> subsp. <i>rubens</i> [*]	red brome	X	X
<i>Bromus tectorum</i> [*]	cheatgrass	X	X

<i>Elymus glaucus</i>	blue wildrye	X	
<i>Hordeum marinum</i> *	barley	X	
<i>Schismus barbatus</i> * ⁺	common Mediterranean grass	X	X
<i>Stipa hymenoides</i> ⁺	indian ricegrass	X	X

California Rare Plant Rank (CRPR):

2B: Plants rare, threatened, or endangered in California but more common elsewhere.

CRPR Threat Ranks:

0.2 Fairly threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

* Not native to California.

⁺ Observed during the 2018 Special-status Plant Habitat Assessment

Sources:

California Natural Diversity Data Base (CDFW 2018)

CNPS Rare and Endangered Plant Inventory (CNPS 2018)

High Desert Solar Wildlife Compendium

Scientific Name	Common Name
REPTILES	
Testudinidae	True land tortoises
<i>Gopherus agassizii</i> ***	Desert tortoise
Iguanidae	Iguanids
<i>Dipsosaurus dorsalis</i>	Desert iguana
<i>Callisaurus draconoides</i>	Zebra-tailed lizard
<i>Gambelia wislizenii</i>	Long-nosed leopard lizard
<i>Phrynosoma platyrhinos calidiarum</i>	Southern desert horned lizard
<i>Sceloporus magister</i>	Desert spiny lizard
<i>Uta stansburiana</i>	Side-blotched lizard
Teiidae	Whiptail lizards
<i>Aspidoscelis tigris</i>	Tiger whiptail
Colubridae	Colubrids Snakes
<i>Coluber flagellum piceus</i>	Red racer
<i>Salvadora hexalepis</i>	Western patch-nosed snake
Viperidae	Rattlesnakes
<i>Crotalus cerastes</i>	Sidewinder
<i>Crotalus scutulatus</i>	Mojave rattlesnake
BIRDS	
Anatidae	Geese, Ducks, & Swans
<i>Anas platyrhynchos</i>	Mallard
<i>Branta canadensis</i>	Canada goose
<i>Spatula clypeata</i>	Northern shoveler
Phalacrocoracidae	Cormorants
<i>Phalacrocorax auritus</i>	Double-crested cormorant
Rallidae	Rails, Gallinules, and Coots
<i>Fulica americana</i>	American coot
Recurvirostridae	Stilts and Avocets
<i>Himantopus mexicanus</i>	Black-necked stilt
Threskiornithidae	Ibises and Spoonbills
<i>Plegadis chihi</i>	White-faced ibis
Cathartidae	Vultures
<i>Cathartes aura</i>	Turkey vulture
Accipitridae	Hawks, Eagles, and Kites
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo swainsoni</i> ***	Swainson's hawk
<i>Circus cyaneus</i> **	Northern harrier
Charadriidae	Plovers and Lapwings
<i>Charadrius vociferus</i>	Killdeer
Picidae	Woodpeckers
<i>Picoides scalaris</i>	Ladder-backed woodpecker
Falconidae	Falcons
<i>Falco columbarius</i> **	Merlin
<i>Falco mexicanus</i>	Prairie falcon
<i>Falco peregrinus</i> **	Peregrine falcon
<i>Falco sparverius</i>	American kestrel
Odontophoridae	New world Quail

High Desert Solar Wildlife Compendium

<i>Callipepla californica</i>	California quail
Columbidae	Pigeons and Doves
<i>Zenaida macroura</i>	Mourning dove
Cuculidae	Cuckoos and Roadrunners
<i>Geococcyx californianus</i>	Greater roadrunner
Caprimulgidae	Nightjars
<i>Chordeiles acutipennis</i>	Lesser nighthawk
<i>Phalaenoptilus nuttallii</i>	Common Poorwill
Apodidae	Swifts
<i>Aeronautes saxatalis</i>	White-throated swift
Trochilidae	Hummingbirds
<i>Calypte anna</i>	Anna's hummingbird
<i>Calypte costae</i>	Costa's hummingbird
Tyrannidae	Tyrant flycatchers
<i>Myiarchus cinerascens</i>	Ash-throated flycatcher
<i>Sayornis nigricans</i>	Black phoebe
<i>Sayornis saya</i>	Say's phoebe
<i>Tyrannus verticalis</i>	Western kingbird
<i>Tyrannus vociferans</i>	Cassin's kingbird
Laniidae	Shrikes
<i>Lanius ludovicianus**</i>	Loggerhead shrike
Vireonidae	Vireos, Shrike-Babblers, and Erpornis
<i>Vireo gilvus</i>	Warbling vireo
Corvidae	Jays and Crows
<i>Corvus corax</i>	Common raven
Alaudidae	Larks
<i>Eremophila alpestris</i>	Horned lark
Hirundinidae	Swallows
<i>Hirundo rustica</i>	Barn swallow
<i>Petrochelidon pyrrhonota</i>	Cliff swallow
<i>Stelgidopteryx serripennis</i>	Northern rough-winged swallow
<i>Tachycineata bicolor</i>	Tree swallow
Remizidae	Penduline-Tits
<i>Auriparus flaviceps</i>	Verdin
Troglodytidae	Wrens
<i>Campylorhynchus brunneicapillus</i>	Cactus wren
<i>Salpinctes obsoletus</i>	Rock wren
Turdidae	Bluebirds and Thrushes
<i>Turdus migratorius</i>	American robin
Mimidae	Mockingbirds and Thrashers
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Oreoscoptes montanus</i>	Sage thrasher
Sturnidae	Starlings
<i>Sturnus vulgaris*</i>	European starling
Emberizidae	Towhees and Sparrows
<i>Amphispiza belli</i>	Bell's (Sage) sparrow
<i>Amphispiza bilineata</i>	Black-throated sparrow
<i>Chondestes grammacus</i>	Lark sparrow

High Desert Solar Wildlife Compendium

<i>Passerculus sandwichensis</i>	Savannah sparrow
<i>Spizella passerina</i>	Chipping sparrow
<i>Zonotrichia leucophrys</i>	White-crowned sparrow
Parulidae	New World Warblers
<i>Cardellina pusilla</i>	Wilson's warbler
<i>Geothlypis trichas</i>	Common yellowthroat
<i>Setophaga townsendi</i>	Townsend's warbler
Icteridae	Blackbirds & Orioles
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Quiscalus mexicanus</i>	Great-tailed grackle
<i>Sturnella neglecta</i>	Western meadowlark
<i>Xanthocephalus xanthocephalus</i> **	Yellow-headed blackbird
Cardinalidae	Cardinals & Allies
<i>Pheucticus melanocephalus</i>	Black-headed grosbeak
<i>Piranga ludoviciana</i>	Western tanager
Fringillidae	Finches
<i>Spinus psaltria</i>	Lesser goldfinch
<i>Haemorhous mexicanus</i>	House finch
MAMMALS	
Leporidae	Hares & Rabbits
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Sylvilagus audubonii</i>	Desert cottontail
Sciuridae	Squirrels
<i>Ammospermophilus leucurus</i>	White-tailed antelope ground squirrel
Heteromyidae	Pocket mice & Kangaroo rats
<i>Chaetodipus sp.</i>	Pocket mouse
Canidae	Dogs, Wolves, & Foxes
<i>Canis latrans</i>	Coyote
<i>Vulpes macrotis arsipus</i> **	Kit fox

*Non-native species

**CDFW California Species of Special Concern/CDFW Fully Protected Species/Watch List
Species/Protected by CCR

***State and/or Federally Listed Species

Focused Special-Status Plant Survey Data Sheets



Rare Plant Survey Form

Date: 5/15/17

Project # _____

Project Name Victorville Solar Rare Plant Survey

Surveyor Names: Greg Hampton, Kevin Cornell, Kent Hughes, Jerry Aguirre

Location(s): NW section

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	10:15	55	7-10	40%
END	16:00	63	7-15	70%

RARE PLANT DATA		
SPECIES	GPS COORDINATES	NOTES (veg community, population size, etc.)
DETO Class 5	383 3782 N 466261 E	Creosote Bush scrub, 1, (carcass)
Eriastrum spp	3833666 N 466028 E	Creosote Bush scrub, schismos, 1 11:46 am



Rare Plant Survey Form

Date: 5/16/17

Project # 2017-062.002/001

Project Name WSolar Rare Plant Surveys

Surveyor Names: Greg Hampton, Kevin Cornell, Jerry Aguirre, Kent Hughes

Location(s): NW section Day 2

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0745	53°	2-5	0%
END	0235	70°	2-6	5%

RARE PLANT DATA		
SPECIES	GPS COORDINATES	NOTES (veg community, population size, etc.)

Greg H.
4/3/18

Apr 3, 2018

Uzitorville (HDS) Rare Plant Survey

10 00 AM

63°F

0-5 wind

80% cloud

Plants observed

Native

Larrea tridentata
Tetradymia stenocephala
Ambrosia dumosa
Amsinckia sp.
Stipa hymenoides
Mentzelia sp.
Ephedra nevadensis
Lycium cooperii
Yucca brevifolia
Cylindropuntia echinocarpa
Brassica sp.
Eriogonum gracillimum
Ambrosia salsola
~~Gnaphalium spicatum~~
Acamptopappus sphaerosephalus
Kraschenokovia lanceolata
Oenothera deltoides
Ambrosia acanthicarpa
Loveseliastrum sp.
Croton californica

Non-Native

Salsola tragus
Schismus barbatus
Erodium cicutarium
Bromus tectorum

Corey H
4/4/18

(HDS) Victorville Solar Rare Plant Survey

0800
57°F
0-5 wind
100% cloud

- Native
- Ambrosia dumosa
 - Acanthopappus sphaerocephalus
 - Larrea tridentata
 - Ambrosia salsola
 - Croton californica
 - Lycium cooperii
 - Amsinckia sp.
 - Mentzelia sp.
 - Eriogonum gracillimum
 - Eriastrum sp.
 - Stipa hymenoides
 - Asclepias fascicularis
 - Allium sp.
 - Yucca brevifolia
 - Chamaecrista sp.
 - Cryptantha micrantha
 - Cylindropuntia ramosissima
 - Lycium andersonii
 - Ephedra nevadensis
 - Krusheninkovia lanata
 - Stillingia paucidentata
 - Stephanomeria
 - Rumex crispus
 - Cylindropuntia echinocarpa
 - Dicoria canescens
 - Astragalus sp.

- Non-native
- Erodium cicutarium
 - Schismus barbatus
 - Brassica sp.
 - Salsola tragus
 - Bromus madritensis ssp
rubres

- Loeseliastrum sp.
- Chylisma sp.
- Oenothera deltoides
- Atriplex canescens
- Eriogonum fasciculatum
- Sarcobatus mexicana

~~Bulb/Grass?~~

Greg H
4/5/14

0800 AM

Victorville Solar (HDS)

1-5 mph wind
3% cloud cover
58°F

Native

Larrea tridentata
Eriogonum fasciculatum
Ambrosia salsola
Yucca brevifolia
Stipa hymenoides
Ambrosia dumosa
Croton californica
Amsinckia sp.
Ephedra nevadensis
Lycium cooperii
Mentzelia sp.
Acanthopappus sphaerocephalus
Loeschostrum sp.
Eriogonum gracillimum
Krascheninnikovia lanata
Oenothera deltoides

Non-Native

Salsola fragus
Schismus barbatus
Brassica sp.
Erodium cicutarium
Bromus tectorum

0800 AM

(HDS) Victorville Solar Rare Plant

Greg H. 4/6/18

1-8 mph wind

85% cloud cover

60°F

Native

Larrea tridentata
Ambrosia dumosa
Amaranthus sp.
Ephedra nevadensis
Croton californica
Cylindropuntia canosissima
Streptanthella longirostris
Krosteniokovva lanata
Lycium andersonii
Lycium cooperii
Opuntia basilaris
Atriplex canescens
Acamptopappus sphaerocephalus
Ambrosia salsola
Cylindropuntia echinocarpa
Stillingia paucidentata
Yucca brevifolia
Eriogonum fasc. var. poliofolium
Stipa hymenoides
Chorizanthe brevicornu
Ambrosia acanthicarpa
Ericameria sp.
Eriogonum reniforme
Stephanomeria pauciflora
Santellaria mexicana
Eriogonum inflatum

Non-native

Schizanthus barbatus
Descurainia sp
Erodium acetabulum
Salsola tragus
Bromus tectorum

0945 - Start
75°F

HDS Rare Plant

Greg Hampton
5/8/18

80% cloud cover
0-3 mph wind

Native

Non-native

1435 - Stop
94°F

60% cloud cover
0-3 mph wind

- Larrea tridentata
- Ephedra nevadensis
- Stipa hymenoides
- Mentzelia sp.
- Amsinckia sp.
- Ambrosia dumosa
- Croton californica
- Lycium cooperi
- Yucca brevifolia
- Stipa hymenoides
- Ambrosia salsola
- Tetradymia stenolepis
- Acumulepappus sphaerocephalus
- Lycium andersonii
- Eriogonum cf. maculatum
- Krascheninikovia lanata

- Salsola tragus
- Schismus barbatus
- Erodium cicutarium
- Brassica tournefortii

HDS Rare Plant

Greg Hampton
5/9/18

Start: 0730

66°F

0% cloud

3-10 mph wind

Native

Larrea tridentata

Ambrosia dumosa

Ambrosia selsole

Yucca brevifolia

Amsinckia sp.

Lepidium sp.

Ephedra nevadensis

Croton californica

Cylindropuntia ramosissima

Stipa hymenoides

Stillingia paucidentata

Lessingia sp.

Chylismia sp.

Loeselistrum sp.

Acamptopappus sphaerocephalus

Caulanthus sp.

Poscurina sp.

Cylindropuntia echinocarpa

Tiquilia sp.

Rascheniikovia lanata

Lycium andersonii

Eriogonum fasciculatum

Mentzelia sp.

Non-native

Schismus barbatus

Salsola tragus

Brassica sp.

Erodium cicutarium

Stop: 1300

93°F

0% cloud

0-10 mph wind

~~Ambrosia~~ ~~Deltoides~~
~~Deltoides~~

Euphorbia sp.

Dicoria canescens

Eriogonum sp (annual)

Onorizantho brevicornu

Lycium cooperii

High Desert Solar

5/10/18

Start: 0800

66°F

1-10 mph wind

0% cloud cover

Stop: 1400

86°F

8-20 mph wind

0% cloud cover

Adenophyllum cooperii

Datura cf. wrightii

Eriogonum desertorum

Native

Larrea tridentata

Ambrosia dumosa

Cylindropuntia ramosissima

Stipa hymenoides

Descurainia pinnata

Ephedra nevadensis

Psoralea argemone

Opuntia basilaris

Chaenactis sp.

Mentzelia sp.

Ambrosia salsola

Ambrosia arcanthocarpa

Eremothera boothii v. *condensata*

Lycium andersonii

Mentzelia sp.

Salsola tragus

Lycium cooperii

Ericameria nauseosa

Stephanomeria pauciflora

Croton californica

Non-native

Schismus barbatus

Brassica sp.

Erodium cicutarium

Bromus mad ssp rubens

Atriplex canescens

Atriplex polycarpa

Eriogonum sp.

Caulanthus sp.

Acanthopappus sp. sericeus

Senna covesii

Scutellaria mexicana

Chorizanthe brevicornis

Eriogonum sp. (annual)

Eriogonum inflatum

Cilia sp.

Eriogonum fasciculata
v. *polifolium*

Lepidium sp.

Cylindropuntia echino

Stillingia pauciflora

0740

High Desert Solar

5/11/18

Start: 64°F

60% cloud cover

5-15 mph wind

Native

Ephedra nevadensis

Ambrosia dumosa

Larrea tridentata

Amsinckia sp.

Pescurina sp.

Krascheninikovia lanata

Lycium cooperi

Acanthopappus
sphaerocephalus

Mentzelia sp.

Stipa hymenoides

Loeseliastrum sp.

Ambrosia salsola

Eriogonum fasc. v. fasc.

Yucca brevifolia

Atriplex canescens

Oenothera deltoides

Ambrosia acanthicarper

Croton californica

Stillingia paucidentata

Ephedra californica

Non-native

Schismus barbatus

Erodium cicutarium

Brassica sp.

Salsola tragus

Brassica sp.

Cylindropuntia
echinocarpa

Stop: 1035

75°F

20% cloud cover

5-15 mph wind

10/9/18

High Desert
Solar - Rare Plant

Greg H.

Plant Species Observed

Native

Larrea tridentata
Yucca brevifolia
Eriogonum cf. maculatum (dry)
Eriogonum inflatum (dry)
Oenothera deltoidea (dry)
Psoralea sp. (needs verification)
Ambrosia dumosa
Ambrosia salsola
Cylindropuntia echinocarpa
Cylindropuntia ramosissima
Lepidium sp. (dry)
Amsinckia sp. (dry)
Ephedra ~~na~~ sp.
Acanthopappus sphaerocephalus
Ambrosia acanthocarpa (dry)
Scutellaria mexicana
Mentzelia sp.
Croton californicus
Stipa hymenoides

Non-Native

Schismus barbatus
Frodium cicuterium
Brassica sp.
Salsola tagus
Descurainia sp.

APPENDIX F

Protocol Desert Tortoise Survey Data Sheets

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR-DTBVOW-20170406-JR

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

VVSOLAR-DTBVOW-20170406-JR

General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0615</u>	End: <u>1400</u>
<u>J. Renard,</u>	Temp* (°F)	Start: <u>51</u>	End: <u>77°</u>
<u>J. Aguirre</u>	<small>6" above ground in shade</small>	Start: <u>∅</u>	End: <u>5-7 mph</u>
	Wind (mph)	Start: <u>∅</u>	End: <u>40%</u>
	% Cloud Cover	Start: <u>30</u>	

Area(s) surveyed

N end of Project area.

Site Information

Project Name: Victorville Solar

Location: Victorville, CA.

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? _____]

E: _____ [PHOTOS? _____]

S: _____ [PHOTOS? _____]

W: _____ [PHOTOS? _____]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: Undeveloped SE: Undeveloped

NE: " SW: "

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: 10m

Field Observations

Vegetation Communities:

Plants

Crocosate yucBRE, AMSMEN, AMBDVM, EROCEC, SCTARA, LISCOU
whitestem mesquite, ABRVEL, EPHNEV

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA, Coyote, ~~WSP~~, ~~WTRC~~, WLCSP, Jackrabbit, HOLIA, white-tail Antelope Squirrel,
Leopard Lizard

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

Recorder: Jerry A. Jan R.



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062-002

GPS file: VVSULAR-DTBOWL-2017-06-02

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0754	BUOW	B	-	466114	3833778	6x8 inch, SE Facing (No sign)
2	1020	BUOW	B	-	466466	3833434	4 burrow complex 6x5, various aspects (No sign)
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)		*CARCASS	
1 - Healthy	A - Foraging	1 - Fresh or putrid	A - signs of predation
2 - URTD	B - Basking	2 - Normal color, scutes adhered to bone	B - No signs of predation
3 - Shell Cracked	C - In burrow	3 - Scutes peeled off bone	
4 - Peeling scutes	D - Digging	4 - Shell bone is falling apart; growth rings on scutes are peeling	
5 - Ticks	E - Traveling	5 - Disarticulated and scattered	

Date: 4/6/17

GPS File: VV5dgr-DTBUAW

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017.062.002

Client: _____

General Information	Weather Data		
Observers: <u>J. Renark</u> <u>Keenell</u> <u>J. Aguirre</u> <u>W. Turner</u>	Time (24 hr)	Start: <u>630</u>	End: <u>1400</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u>	End: <u>77</u>
	Wind (mph)	Start: <u>2-3</u>	End: <u>5-7</u>
	% Cloud Cover	Start: <u>40</u>	End: <u>90</u>

Area(s) surveyed

Site Information

Project Name: _____

Location: _____

County: _____

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? ___]

E: _____ [PHOTOS? ___]

S: _____ [PHOTOS? ___]

W: _____ [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA coyote

HOLA Black-tailed Jackrabbit

WEME AMLE

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

Recorder: W. Turner



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

GPS file: VU Scholar-DTBuaw

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0640	NB	-	-	465613	3833873	CORA nest in J-tree - nest building
2 0653	BUAW	B		466169	3833846	BUAW burrow, old pellets, old white wash, nest facing, 3 ft deep 8x6 in tortoise shaped creosote scrub.
3						
4						
5 0713	BUAW	PB	-	466484	3833803	BUAW complex, No sign, 5 ft burrows, several more collapsed, Creosote bush scrub.
6						
7 1045	BUAW	PB	-	465623	3833429	1 Burrow, No sign, Creosote bush scrub, N. facing.
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 4/7/17

GPS File: VVSOLAR BUOWDT
20170407WT

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information		Weather Data	
Observers:	Time (24 hr)	Start: 0637	End: 1310
J. Aquino, J. Renard	Temp* (°F) 6" above ground in shade	Start: 55	End: 71
	Wind (mph)	Start: 0	End: 12-15
	% Cloud Cover	Start: 80	End: 75
Area(s) surveyed			
Project Area (central portion)			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA		N:	[PHOTOS? ___]
County: San Bernardino		E:	[PHOTOS? ___]
Quad:		S:	[PHOTOS? ___]
T _____	R _____	W:	[PHOTOS? ___]
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:	SE:		
NE:	SW:		
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] (N)			
Transect Width: 10 meter			
Field Observations			
Vegetation Communities:			
Plants			
Creosote bush scrub / disturbed (trash dumping).			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CACW, CORA, HOCA, ROWR, jackrabbit, WCSP, Red racer, SASP (Savannah sparrow)			

Date: 4/7/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard

Project #: 2017-062.002

GPS file: VUSOCAR BUOWDT 20170407WT



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0946	Buow	-	-	465521	3832989	W-facing, 8"x10", pot burrow, no sign.
2	0954	DKF	-	-	465354	3833000	E-facing, 15"x18", pot burrow, no sign.
3	1136	Buow	-	-	466210	3832938	SE-facing, 6"x6", burrow w/sign (old pellet/wash)
4	1143	Buow	-	-	466229	3832940	SE-facing, 6"x8", burrow w/sign (old pellet).
5							
6							
7							
8							
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28							
29							
30							

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/7/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VNSolar-BNWD ETO
20170407 KC



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information		Weather Data	
Observers: J. Renard K. Cornell J. Aguirre W. Turner	Time (24 hr)	Start: 0637	End: 1310
	Temp* (°F) 6" above ground in shade	Start: 55	End: 71
	Wind (mph)	Start: 0	End: 12-15
	% Cloud Cover	Start: 30	End: 75
Area(s) surveyed			
Site Information			
Project Name:			
Location:		UTM Coordinates (NAD 83)	
County:		N:	[PHOTOS? ___]
Quad:		E:	[PHOTOS? ___]
T _____ R _____ S _____		S:	[PHOTOS? ___]
Parcel #:		W:	[PHOTOS? ___]
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CAWR			
RWR			

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VUSol AP bound 20170410SR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

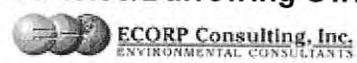
Client: _____

General Information		Weather Data	
Observers:		Time (24 hr)	Start: <u>0611</u> End: <u>1240</u>
<u>J. Renard, L. Dorrough</u>		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>38</u> End: <u>63</u>
		Wind (mph)	Start: <u>0-7</u> End: <u>0-3</u>
		% Cloud Cover	Start: <u>50</u> End: <u>20</u>
Area(s) surveyed			
<u>Project Area.</u>			
Site Information			
Project Name: <u>Victorville Solar</u>		UTM Coordinates (NAD 83)	
Location: <u>Victorville, CA</u>		N:	[PHOTOS? <input checked="" type="checkbox"/>]
County: <u>San Bernardino</u>		E:	[PHOTOS? <input checked="" type="checkbox"/>]
Quad:		S:	[PHOTOS? <input checked="" type="checkbox"/>]
T _____ R _____ S _____		W:	[PHOTOS? <input checked="" type="checkbox"/>]
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	%Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:	SE:		
NE:	SW:		
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] <input checked="" type="checkbox"/> [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
<u>Crooked Bush scrub</u>			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
<u>CAGO</u>	<u>AMRO</u>	<u>Desert Quana</u>	
<u>COXA</u>	<u>SASP</u>	<u>HOFI</u>	<u>Leopard Liz.</u>
<u>AMRO</u>	<u>ATFL</u>	<u>Whiptail</u>	
<u>SASP</u>	<u>TUVU</u>	<u>Side-Blotched Lic.</u>	
<u>NOMO</u>	<u>CHSP</u>	<u>WCSP</u>	

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard



Project #: 2017-062.002

GPS file: VUSAAR buandt 20170410 SR

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign°	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0700	BUOW	B	N/A	465682	3832695	Pot. BUOW entrances. white wash 8" W x 10" H, 6x6 avg 6x6
2 0915	Nest	—	—	465770	3832367	Raven nest in Joshua Tree
3 1223	DT	C	5	466285	3832013	Class 5 carcass, scattered. OLP 20 pieces
4						
5						
6						
7						
8						
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30						

* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VUSAAR DT BUW041017 KC



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

General Information	Weather Data		
Observers:	Time (24 hr)	Start: _____	End: _____
<u>K. Cornell, P. Wasz</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: _____	End: _____
	Wind (mph)	Start: _____	End: _____
	% Cloud Cover	Start: _____	End: _____

Area(s) surveyed

Project Area (south)

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? ___]

E: _____ [PHOTOS? ___]

S: _____ [PHOTOS? ___]

W: _____ [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

Recorder: P. Wast

Project #: 2017-062.002

GPS file: WSPCAL DT Burrow 041017-KC



Client: _____

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign*	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0700	DKF	Y		465683	3832694	known DKF Den (2 holes) w/5 of old scat
2						
3						
4						
5						
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30						

* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)		*CARCASS	
1 - Healthy	A - Foraging	1 - Fresh or putrid	A - signs of predation
2 - URTD	B - Basking	2 - Normal color, scutes adhered to bone	B - No signs of predation
3 - Shell Cracked	C - In burrow	3 - Scutes peeled off bone	
4 - Peeling scutes	D - Digging	4 - Shell bone is falling apart; growth rings on scutes are peeling	
5 - Ticks	E - Traveling	5 - Disarticulated and scattered	

Date: 4/11/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VV SOLAR BUOW DT 041117JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0630</u>	End: <u>1235</u>
<u>J. Renard, L. Dorrough</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>43°F</u>	End: <u>70°F</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0</u>
	% Cloud Cover	Start: <u>10</u>	End: <u>30</u>

Area(s) surveyed

Gen-ties + 500-ft buffer (East of Project Area)

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? C]

E: _____ [PHOTOS? C]

S: _____ [PHOTOS? C]

W: _____ [PHOTOS? C]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] (N)

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA Jac Rabbit

NOMO MALL

WCSP AMRD

DCCD LEGD

TUVU Cochonchip

ATPL YHBB

CAGO Horned Lizard

Date: 4/11/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard

Project #: 2017-062.002

GPS file: WSOLARBUOWDT041117.JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0700	Nest	—	—	465794	3831911	Active Raven nest in Joshua tree
2 0900	BUOW	B	—	466827	3831862	Burrow complex. Ppr. Owl. 4 entrances ~ 6x6 - 6x8 No owl sign kit fox scat.
3 1000	BUOW	B	—	466738	3831689	2 burrows 8x8" No BUOW sign. Lots of KF scat
4 1000	KIT	B	—	" ↓ "	" ↓ "	fresh old scat. Old prey remains ↓
5 1220	BIRD	—	—	466602	3832571	Yellow-headed Blackbird obs. by JR
6						
7						
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29						
30						

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/11/17
GPS File: _____

Desert Tortoise/Burrowing Owl Survey



ECO P Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information	Weather Data		
Observers: <u>P. Wasz, W. Turner</u>	Time (24 hr)	Start: <u>0630</u>	End: <u>1235</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>43</u>	End: <u>74</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0-3</u>
	% Cloud Cover	Start: <u>10</u>	End: <u>40</u>

Area(s) surveyed
Gen - ties

Site Information

Project Name: <u>Victorville Solar</u>	UTM Coordinates (NAD 83)	
Location: <u>Victorville, CA</u>	N:	[PHOTOS? ___]
County: <u>San Bernardino</u>	E:	[PHOTOS? ___]
Quad:	S:	[PHOTOS? ___]
T: _____ R: _____ S: _____	W:	[PHOTOS? ___]
Parcel #:		

Physical Characteristics

Elevation:	Aspect:	Soils:
Land Form*: _____	% Slope: _____	Other: _____
<small>* e.g. mesa, bajada, wash</small>		

Land Uses:

NW:	SE:
NE:	SW:

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]
Transect Width: _____

Field Observations

Vegetation Communities:
Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 4/11/17

Recorder: P. Wasz

GPS file: _____

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign°	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
0908	DKF	B	known	466829	3831860	4 Known DKF dens lots of old scat
0915	DKF	B	Pot	466827	3831755	2 Potential DKF dens
0915	BUOW	B	Pot	" "	" "	2 Potential BUOW burrows No sign
1140	DKF	B	known	465498	3832827	1 known DKF den some New but mostly old scat
1140	BUOW	B	Pot	" "	" "	2 Pot DKF den under fallen tree No sign
1212	DKF	B	Pot	465195	3833010	2 Pot BUOW burrow same as above
1212	BUOW	B	Pot	" "	" "	
8						
9						
10						
11						
12						
13						
14						
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16						
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29						
30						

° T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

<p>*BURROW / PALLET (Note Aspect)</p> <p>1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)</p>		<p>*SCAT</p> <p>1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber</p>	
<p>*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)</p> <p>1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks</p>		<p>*CARCASS</p> <p>A - Foraging B - Basking C - In burrow D - Digging E - Traveling</p> <p>1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered</p>	
		<p>A - signs of predation B - No signs of predation</p>	

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR BUOW DT041217JK



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Power

General Information		Weather Data	
Observers: J. Renaud L. Dorough		Time (24 hr)	Start: 0613 End: 1240
		Temp* (°F) 6" above ground in shade	Start: 48 End: 73
		Wind (mph)	Start: 0-1 End: 4-7
		% Cloud Cover	Start: 0 End: 0
Area(s) surveyed Gen-ties			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA		N:	[PHOTOS? ___]
County: San Bernardino		E:	[PHOTOS? ___]
Quad:		S:	[PHOTOS? ___]
T _____	R _____	W:	[PHOTOS? ___]
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] (N)			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants Creosote Bush scrub, desert wash, developed, disturbed.			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CDRA	Desert Tortoise (juvie)	Coyote	
BLPH	Calif. Whiptail	GRRO	
GTGR	Jack rabbit	ANHU	
WCSP	Antelope Squirrel		
EUST	PEFA		
ATFL	zebra-tailed lizard		

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renaud



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

GPS file: VVSOLAR BUOWDT041217JR

Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1		DKF	-	-	466864	3831183	Coyote-sized burrow - pot DKF; no sign, facing N; 14" w x 16" H
2							
3							
4							
5							
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^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS A - Foraging B - Basking C - In burrow D - Digging E - Traveling	
1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered		A - signs of predation B - No signs of predation	

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR DTBOW 041217.PW



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: Middle River Power

General Information		Weather Data	
Observers:	Time (24 hr)	Start: 0613	End: 1240
P. Wasz	Temp* (°F) 6" above ground in shade	Start: 48	End: 73
W. Turner	Wind (mph)	Start: 0-1	End: 4-7
	% Cloud Cover	Start: 0	End: 0
Area(s) surveyed			
Gen-tier			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA.		N:	[PHOTOS? <input checked="" type="checkbox"/>
County: San Bernardino		E:	[PHOTOS? <input checked="" type="checkbox"/>
Quad:		S:	[PHOTOS? <input checked="" type="checkbox"/>
T _____	R _____	W:	[PHOTOS? <input checked="" type="checkbox"/>
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:			SE:
NE:			SW:
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] <input checked="" type="checkbox"/> [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Creosote scrub, desert wash, beavertail cactus, barrel cactus.			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
See other team's logs			

Date: 4/12/17
 Recorder: P. Wasz
 GPS file: _____

Desert Tortoise/Burrowing Owl Survey



Project #: 2017-062.002
 Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign°	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	BUOW	B	-	466862	3831183	14" x 16", N aspect, no sign, pot. burrow
2	DT	C	5	466566	3830409	Two bones found under telephone pole, looks like possible DT, photos taken (unlikely DT).
3						
4	PEFA	Obs.	-	466563	3830342	Perched on telephone pole.
5	DT	Obs.	-	466581	3830115	Live baby DT, 2"x2", looked healthy, traveling/digging
6	DT	B	2	466572	3830112	Burrow 2"x1.5"; SE aspect. could be baby DT burrow
7	DT	B	4	466619	3829919	10"x12", S aspect; deteriorated outside, good inside
8	DKF	Pot. Den	-	466619	3829919	10"x12", Pot den, no sign.
9	BUOW	Pot. B.	-	466619	3829919	" Pot burrow, no sign.
10	BUOW	Pot. B.	-	466774	3829881	Large debris pile / concrete pile, no sign.
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° T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 5/2/17

Desert Tortoise/Burrowing Owl Survey

GPS File: WSAARDTBLW 201705 02JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Power

General Information		Weather Data	
Observers: J. Renard A. Schroeder		Time (24 hr)	Start: 0600 End: 12:21
		Temp* (°F) 6" above ground in shade	Start: 53 End: 84
		Wind (mph)	Start: 0-1 End: 0-3
		% Cloud Cover	Start: 0 End: 0
Area(s) surveyed Southern Gen-tie.			
Site Information			
Project Name: Victorville Solar			
Location: Victorville, Ca.		UTM Coordinates (NAD 83)	
County: SB.		N:	[PHOTOS? ___]
Quad:		E:	[PHOTOS? ___]
T _____ R _____ S _____		S:	[PHOTOS? ___]
Parcel #:		W:	[PHOTOS? ___]
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	%Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
BTSP, Mojave Green, Antelope ground squirrel, COHA, ATFL, Desert Tortoise Zebra tail, CA Whiptail, Lark sparrow, COHB, POWA, LENI			

Date: 5/2/17

Desert Tortoise/Burrowing Owl Survey

Recorder: A. Schroeder

GPS file: VUSaAR DTBuow 20170502JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: _____

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0807	DT	B	2	467182	3829380	13" x 6" x 18", No sign, facing N, under pencil cholla
2	0836	NEST	-	-	467119	3829339	BTSP Nest in pencil cholla, feeding young
3	0903	BUOW	B		467131	3829220	8'x6", North Aspect, no sign
4	0921	DT	B	2	466874	3829613	12" x 5", No sign, NW Aspect
5	0933	DT	S	1	466841	3829593	2 pieces scat, 70 ft SE from live tortoises mating ↳ more scat in the vicinity
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^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
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A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 5/2/2017

Desert Tortoise/Burrowing Owl Survey

Recorder: BZ



Project #: 2017-062.002

GPS file: VV Solar DT BUOW 20170502WT

Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign*	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0640	BUOW	^{potential} B	466963	3828216	Culvert, corrugated pipe 16" x 18" diameter - NO sign, potential E/W aspect	
2	0620	BUOW	^{potential} B	466962	3828259	10x10" burrow north facing, partially collapsed under creosote	
3	0807	DT	S	467150	3829376	6cm L x 1cm diameter 30m away from burrows	
4	0842	DT/BUOW	B	467175	3829262	potential burrow, class v - under creosote bush, base of hillside N aspect	
5	0930	DT	T	466834	3829592	2 Live Tortoise mating ♂ smaller than ♀, ♂ ~ 10" CL, 6" D, 8" CW → slight damage to back ♀ ~ 12" CL, 7" D, 10" CW → slight damage to back	
6	—	—	—	—	—	♂ also has damage to front legs scales rubbed/discolored.	
7	0954	DT	S	466867	3829573	trail of 5 pieces of scat	
8	1015	LASP	NEST	ACTIVE	466924	3829031	3 eggs in nest (Lark sparrow)
9	1025	BUOW/KITEFOX	^{potential} B	467014	3829215	Good condition, no recent use this season, no sign of burrow. Kitefox scat present.	
10	1047	DT	B	466846	3829477	2 burrows on a hill, likely connect to creosote bush facing Good condition, tracks/scat LARGE HILL SIDE, midway up 16" base, 8" height 5' back then turns N aspect	
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* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

<p>*BURROW / PALLET (Note Aspect)</p> <ol style="list-style-type: none"> 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe) 	<p>*SCAT</p> <ol style="list-style-type: none"> 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber
<p>*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)</p> <ol style="list-style-type: none"> 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks 	<p>*CARCASS</p> <ol style="list-style-type: none"> 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered

Date: 5/3/17

Desert Tortoise/Burrowing Owl Survey

GPS File: WV solar dtbuow 20170503SR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Paver

General Information	Weather Data		
Observers:	Time (24 hr)	Start <u>0600</u>	End: <u>1100</u>
<u>Jon Renard</u> <u>Wendy Turner</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: 57 <u>57</u>	End: <u>83°</u>
	Wind (mph)	Start: <u>0-3</u>	End: <u>2-5</u>
	% Cloud Cover	Start: <u>15</u>	End: <u>0</u>

Area(s) surveyed

Site Information

Project Name: _____

Location: _____

County: _____

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? ___]

E: _____ [PHOTOS? ___]

S: _____ [PHOTOS? ___]

W: _____ [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 5/3/17

Desert Tortoise/Burrowing Owl Survey

Recorder: Wendy Turner

Project #: 2017-067.002

GPS file: NSolar-DTBUOW-20170503JRC



Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

	Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	0620	BUOW	B		466243	3830326	3 burrows, W facing, No sign, 2x5in, decent condition,
2							hillside drainage, CBS
3	0702	DT	B	1	466348	3830413	Active burrow w/ class 1 scat + tracks in hillside
4							ravine/wash, saltbush scrub, N facing, 16 x 2in
5							3ft deep, turns R. out of sight. (10+ scats)
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^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 5/14/18
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062.003
 Client: MRD



General Information		Weather Data	
Observers:		Time (24 hr)	Start: <u>0610</u> End: <u>1330</u>
J. Renard L. Simpson T. Dee A. Schroeder		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>76</u>
		Wind (mph)	Start: <u>0-2</u> End: <u>0-2</u>
		% Cloud Cover	Start: <u>0</u> End: <u>1</u>
Area(s) surveyed			
<u>solar farm - northwest 2/3 smaller solar farm rectangle; 2/3 top/northern most portion of the largest 2/3 southern rectangle</u>			
Site Information			
Project Name: <u>High Desert Solar</u>		Photos Taken? <input checked="" type="radio"/> [Y] [N]	
Location: <u>Adelanto</u>		County: <u>San Bernardino County</u>	
Physical Characteristics			
Soils:		Other:	
Land Form*: <small>* e.g. mesa, bajada, wash</small>			
Land Uses (residential, commercial, open space, etc.):			
N:		E:	
S:		W:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? <input type="radio"/> [Y] <input type="radio"/> [N]			
Transect Width: <u>10-meter</u>			
Field Observations			
Vegetation Communities: <u>creosote bush scrub</u>			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
Common raven Horned lark Ash-throated flycatcher Swainson's hawk (34.6335°, -117.3801°) Black-headed grosbeak verdin desert horned lizard loggerhead shrike (34.6371°, -117.3811°)		Wilson's warbler warbling vireo white-tailed antelope squirrel long-nosed leopard lizard Great Basin whiptail western side-blotched lizard mourning dove lesser nighthawk	

Date: 5/15/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003
 Client: MRP



General Information	Weather Data		
Observers: J. Renard L. Simpson T. Dec A. Schroeder	Time (24 hr)	Start: <u>0625</u>	End: <u>1320</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>52</u>	End: <u>78</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0-2</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>

Area(s) surveyed
Solar farm - middle of southern 1/2 largest solar farm rectangle

Site Information
 Project Name: High Desert Solar
 Location: Adelanto, CA Photos Taken? [Y] [N]
 County: San Bernardino

Physical Characteristics
 Soils:
 Land Form*: Other:
 * e.g. mesa, bajada, wash

Land Uses (residential, commercial, open space, etc.):
 N: E:
 S: W:

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]
 Is site staked or marked? [Y] [N]
 Transect Width: 10-meter

Field Observations
 Vegetation Communities: CBS

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
HOLA, CORA, ATFL, SWHA, WAVI, WIWA, BTSP, BESP, LENI, black-tailed jackrabbit, BTGR, gull sp., YRWA, SAPH, Great Basin whiptail, desert horned lizard, western side-blotched lizard

Date: 5/16/18
 GPS File: collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062.003
 Client: MRP



General Information		Weather Data																									
Observers: J. Renard L. Simpson T. Dee A. Schroeder		Time (24 hr)	Start: <u>0625</u> End: <u>1330</u>																								
		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>78</u>																								
		Wind (mph)	Start: <u>0-1</u> End: <u>2-4</u>																								
		% Cloud Cover	Start: <u>0</u> End: <u>0</u>																								
Area(s) surveyed																											
Solar farm - bottom/southern most section of the largest $\frac{1}{2}$ southern rectangle. Buow buffer																											
Gen-tie -																											
Site Information																											
Project Name: <u>High Desert solar</u>		Photos Taken? <input checked="" type="checkbox"/> [Y] [N]																									
Location: <u>Adelanto CA</u>																											
County: <u>San Bernardino</u>																											
Physical Characteristics																											
Soils:		Other:																									
Land Form*: <small>* e.g. mesa, bajada, wash</small>																											
Land Uses (residential, commercial, open space, etc.):																											
N:		E:																									
S:		W:																									
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]																											
Is site staked or marked? <input type="checkbox"/> [Y] <input type="checkbox"/> [N]																											
Transect Width: 10-meter																											
Field Observations																											
Vegetation Communities: <u>CBS</u>																											
Plants																											
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]																											
<table border="0"> <tr> <td>cactus wren</td> <td>wilson's warbler</td> <td>white-tailed antelope</td> </tr> <tr> <td>black-throated sparrow</td> <td>mourning dove</td> <td>squirrel</td> </tr> <tr> <td>lesser nighthawk</td> <td>desert tortoise (see pg. 2)</td> <td>Great basin whiptail</td> </tr> <tr> <td>black-tailed jackrabbit</td> <td>Killdeer</td> <td>western side-blotched lizard</td> </tr> <tr> <td>warbling vireo</td> <td>Bell's sparrow</td> <td>western zebra-tailed lizard</td> </tr> <tr> <td>common raven</td> <td>Say's Phoebe</td> <td></td> </tr> <tr> <td>horned lark</td> <td>Townsend's warbler</td> <td></td> </tr> <tr> <td>ash-throated flycatcher</td> <td>ladder-backed woodpecker</td> <td></td> </tr> </table>				cactus wren	wilson's warbler	white-tailed antelope	black-throated sparrow	mourning dove	squirrel	lesser nighthawk	desert tortoise (see pg. 2)	Great basin whiptail	black-tailed jackrabbit	Killdeer	western side-blotched lizard	warbling vireo	Bell's sparrow	western zebra-tailed lizard	common raven	Say's Phoebe		horned lark	Townsend's warbler		ash-throated flycatcher	ladder-backed woodpecker	
cactus wren	wilson's warbler	white-tailed antelope																									
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common raven	Say's Phoebe																										
horned lark	Townsend's warbler																										
ash-throated flycatcher	ladder-backed woodpecker																										

Date: 5/16/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003
 Client: MRP



Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign° (DT only)	Class* (DT only)	Eastings UTM NAD83	Northings UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements [e.g., width of scat], behavior, etc.)
0824	DT	T 3 B	C/1	34.6202	-117.3671	1 large adult unk. sex, size, 3 health in burrow face down 3 away from entrance. burrow 16" wide x 9" tall > 3' deep
0834	DT	B	1	34.6201	-117.3667	18" wide x 7" tall > 3' deep burrow facing SE with 1 piece of class 2 scat inside burrow 3 5 pieces of class 3 outside
0839	DT	S	4	34.6200913	-117.36653147	2 pieces
0939	DT	B	3	34.61932121	-117.36741744	12" wide x 5" tall > 2' deep in deteriorated condition, debris inside, not used recently. old BUOW pellets, DKF scat 3 coyote scat present
1262	DKF			34.6219776	-117.361484	DKF known den. scat present in multiple pieces. burrow is coyote-size 20" tall x 10" wide > 4' deep

← previously marked as Dist
 ← facing south

° T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 5/17/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003
 Client: MRP



General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0625</u>	End: <u>1200</u>
<u>J. Renard</u> <u>L. Simpson</u> <u>J. Aguirre</u> <u>T. Dee</u> <u>A. Schroeder</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u>	End: <u>72</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>1-3</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>

Area(s) surveyed
Gen-tie 3 buffers

Site Information
 Project Name: High Desert Solar
 Location: Adelanto, CA Photos Taken? [Y] [N]
 County: San Bernardino

Physical Characteristics
 Soils:
 Land Form*: Other:
 * e.g. mesa, bajada, wash

Land Uses (residential, commercial, open space, etc.):
 N: E:
 S: W:
 Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]
 Is site staked or marked? [Y] [N]
 Transect Width: 10-meter

Field Observations
 Vegetation Communities: CBS

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

<u>SAPH</u>	<u>WAVI</u>	<u>white-tailed antelope squirrel</u>
<u>gull sp.</u>	<u>WTSW</u>	<u>black-tailed jackrabbit</u>
<u>CORA</u>	<u>EVST</u>	<u>western side-blotch lizard</u>
<u>MALL</u>	<u>VERD</u>	<u>long-nosed leopard lizard</u>
<u>HOFI</u>	<u>KILL</u>	<u>great basin whiptail</u>
<u>MODU</u>	<u>ATFL</u>	<u>NOSH</u>
<u>WIWA</u>	<u>TOWA</u>	<u>COOT</u>
<u>GTGR</u>		<u>California ground squirrel</u>

Date: 10/9/18
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

General Information		Weather Data			
Observers: <u>Greg Hampton</u> <u>Laura Simpson</u> <u>Phil Wartz</u> <u>Torrey Robinson</u>		Time (24 hr) Temp* (°F) <small>0' above ground in shade</small> Wind (mph) % Cloud Cover	AM Start: <u>7:18</u> End: <u>3:50 pm</u>	PM Start: _____ End: _____	Start: _____ End: _____
			Start: <u>4:70</u> End: <u>7:6</u>	Start: _____ End: _____	Start: _____ End: _____
			Start: <u>3-5</u> End: <u>7-10</u>	Start: _____ End: _____	Start: _____ End: _____
			Start: <u>0%</u> End: <u>0%</u>	Start: _____ End: _____	Start: _____ End: _____

Site Information

Project Name: High desert solar

Location: Adelanto Photos Taken? [Y] [N]

County: SB

Area Surveyed:

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Black tailed J-Rabbit Bush Desert Tortoise

WCSP Horned Lizard BWOW

CORA HOLA ~~TR~~ ~~TR~~ TRES

~~W~~ BARS whiptail white-tailed antelope ground squirrel

JAPh

Comments

Date: 10/9/13
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

Burrowing Owl Sign			
Sign	# features	Location (UTM Northing/Easting)	Comments (aspect, dimensions, etc.)
Potential Burrow	1	34.62380892, -117.36444522	DT , NO sign, entrance to wash, SW facing, BOW 4x6 ft
DT - Burrow	2	34.61859714, -117.36495207	Class 1, scat , facing SE DT, 2 entrances (18x12), 1 burrow > 3ft in, recent scat in both, recent scat outside / passing out scat into area
Bow	1	1	occupied burrow w/ sign, whitewash present BOW
DT Burrow	1	34.6191, -117.3650	Class 2. no sign. 4x6. E aspect
DT Burrow	2	34.6191, -117.3651	Class 5, S aspect, 6x6 & (14x24), no DT sign, whitewash entrances in
Bow	1	1	occupied BOW burrows, whitewash & feathers present pellets
Comments:			

pg 2

Date: 1/9/18
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

Burrowing Owl Sign			
Sign	# features	Location (UTM Northing/Easting)	Comments (aspect, dimensions, etc.)
DT Burrow	1	34.61877412, -117.36561419	Class 3, No sign, Deteriorated, NE aspect, 9x4x<12, occupied Burrow w/ sign whitewash & pellets
Burrow	1	11	
Potential Burrow	1	34.61876687 -117.36569161	No sign, 6x6, NW aspect
DT Burrow	3	34.61931551 -117.36457396	Class 3, No sign, N aspect, on slope, various sizes & states of deterioration
DT Burrow	2	34.61949702, -117.3644425 -117.36442560	Class 1, scat, S aspect various sizes, both left wide
Burrow	1	11	2, occupied w/ sign, old whitewash
Owl	1	34.6196 -117.3659	Owl, No burrow, Flushed from under mesquite bush, Adult
DT	1	34.6201 -117.3667	Live tortoise in previously recorded burrow. Female Adult Female at mouth of Burrow 13" length, 9" wide
Comments:			5" tall / 330mm length

Appendix F. Desert Tortoise Survey Weather Conditions

Date	Surveyors	Time		Temperature (°F)		Wind (mph)	
		start	end	start	end	start	end
4/6/2017	JA, JR, KC, WT	0615	1400	51	77	0	5-7
4/7/2017	JA, JR, KC, WT	0637	1310	55	71	0	12-15
4/10/2017	JR, KC, LS, PW	0611	1240	38	63	0-1	0-3
4/11/2017	JR, LS, PW, WT	0630	1235	43	70	0-1	0
4/12/2017	JR, LS, PW, WT	0613	1240	48	73	0-1	4-7
5/2/2017	AS, BZ, JR, WT	0600	1221	53	84	0-1	0-3
5/3/2017	JR, WT	0600	1200	57	83	0-3	2-5
5/14/2018	AS, JR, LS, TD	0610	1330	50	76	0-2	0-2
5/15/2018	AS, JR, LS, TD	0625	1320	52	78	0-1	0-2
5/16/2018	AS, JR, LS, TD	0625	1330	50	78	0-1	2-4
5/17/2018	AS, JA, JR, TD	0625	1200	50	72	0-1	1-3
10/9/2018	PW, LS, GH, TR	0718	1550	47	76	3-5	7-10

AS=Adam Schroeder, BZ=Brian Zitt, GH=Gregory Hampton, JA=Jerry Aguirre, JR=Jon Renard, KC=Kevin Cornell, LS=Lauren (Dorough) Simpson, PW=Phil Wasz, TD=Taylor Dee, TR=Torrey Rotellini, WT=Wendy Turner

APPENDIX G

Focused Burrowing Owl Survey Data Sheets

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR-DTBVOW-20170406-JR

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

VVSOLAR-DTBVOW-20170406-JR

General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0615</u>	End: <u>1400</u>
<u>J. Renard,</u>	Temp* (°F)	Start: <u>51</u>	End: <u>77°±</u>
<u>J. Aguirre</u>	<small>6" above ground in shade</small>	Start: <u>∅</u>	End: <u>5-7 mph</u>
	Wind (mph)	Start: <u>∅</u>	End: <u>40%</u>
	% Cloud Cover	Start: <u>30</u>	

Area(s) surveyed

N end of Project area.

Site Information

Project Name: Victorville Solar

Location: Victorville, CA.

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? _____]

E: _____ [PHOTOS? _____]

S: _____ [PHOTOS? _____]

W: _____ [PHOTOS? _____]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: Undeveloped SE: Undeveloped

NE: " SW: "

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: 10m

Field Observations

Vegetation Communities:

Plants

Crocosate yucBRE, AMSMEN, AMBDVM, EROIC, SCTARA, LISCOU
whitestem mesquite, ABRVEL, EPHNEV

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA, Coyote, ~~WSP~~, ~~WTRC~~, WLCSP, Jackrabbit, HOLIA, white-tail Antelope Squirrel,
Leopard Lizard

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

Recorder: Jerry A. Jan R.



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062-002

GPS file: VVSULAR-DTBOWL-2017-06-02

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0754	BUOW	B	-	466114	3833778	6x8 inch, SE Facing (No sign)
2	1020	BUOW	B	-	466466	3833434	4 burrow complex 6x5, various aspects (No sign)
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
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27							
28							
29							
30							

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
	A - Foraging	A - signs of predation	
	B - Basking	B - No signs of predation	
	C - In burrow		
	D - Digging		
	E - Traveling		

Date: 4/6/17

GPS File: VV5dgr-DTBUAW

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017.062.002

Client: _____

General Information	Weather Data		
Observers: <u>J. Renark</u> <u>Keenell</u> <u>J. Aguirre</u> <u>W. Turner</u>	Time (24 hr)	Start: <u>630</u>	End: <u>1400</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u>	End: <u>77</u>
	Wind (mph)	Start: <u>2-3</u>	End: <u>5-7</u>
	% Cloud Cover	Start: <u>40</u>	End: <u>90</u>

Area(s) surveyed

Site Information			
Project Name: _____			
Location: _____		UTM Coordinates (NAD 83)	
County: _____		N: _____	[PHOTOS? ___]
Quad: _____		E: _____	[PHOTOS? ___]
T _____ R _____ S _____		S: _____	[PHOTOS? ___]
Parcel #: _____		W: _____	[PHOTOS? ___]

Physical Characteristics		
Elevation: _____	Aspect: _____	Soils: _____
Land Form*: _____	% Slope: _____	Other: _____
<small>* e.g. mesa, bajada, wash</small>		

Land Uses:	
NW: _____	SE: _____
NE: _____	SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]
Transect Width: _____

Field Observations

Vegetation Communities:
Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA coyote
HOLA Black-tailed Jackrabbit
WEME AMLE

Date: 4/6/17

Desert Tortoise/Burrowing Owl Survey

Recorder: W. Turner



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

GPS file: VU Scholar-DTBuaw

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0640	NB	-	-	465613	3833873	CORA nest in J-tree - nest building
2 0653	BUAW	B		466169	3833846	BUAW burrow, old pellets, old white wash, nest facing, 3 ft deep 8x6 in tortoise shaped creosote scrub.
3						
4						
5 0713	BUAW	PB	-	466484	3833803	BUAW complex, No sign, 5 ft burrows, several more collapsed, Creosote bush scrub.
6						
7 1045	BUAW	PB	-	465623	3833429	1 Burrow, No sign, Creosote bush scrub, N. facing.
8						
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27						
28						
29						
30						

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 4/7/17

GPS File: VVSOLAR BUOWDT
20170407WT

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information	Weather Data		
Observers:	Time (24 hr)	Start: 0637	End: 1310
J. Aquino, J. Renard	Temp* (°F) 6" above ground in shade	Start: 55	End: 71
	Wind (mph)	Start: 0	End: 12-15
	% Cloud Cover	Start: 80	End: 75

Area(s) surveyed

Project Area (central portion)

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Quad:

T _____ R _____ S _____

Parcel #:

UTM Coordinates (NAD 83)

N: [PHOTOS? ___]

E: [PHOTOS? ___]

S: [PHOTOS? ___]

W: [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] (N)

Transect Width: 10 meter

Field Observations

Vegetation Communities:

Plants

Creosote bush scrub / disturbed (trash dumping).

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CACW, CORA, HOCA, ROWR, jackrabbit, WCSP, Red racer, SASP (saveonah sparrow)

Date: 4/7/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard

GPS file: VUSOCAR BUOWDT 20170407WT



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062-002

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0946	Buow	-	-	465521	3832989	W-facing, 8"x10", pot burrow, no sign.
2	0954	DKF	-	-	465354	3833000	E-facing, 15"x18", pot burrow, no sign.
3	1136	Buow	-	-	466210	3832938	SE-facing, 6"x6", burrow w/sign (old pellet/wash)
4	1143	Buow	-	-	466229	3832940	SE-facing, 6"x8", burrow w/sign (old pellet).
5							
6							
7							
8							
9							
10							
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^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/7/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VNSolar-BNWD ETO
20170407 KC



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information		Weather Data	
Observers: J. Renard K. Cornell J. Aguirre W. Turner	Time (24 hr)	Start: 0637	End: 1310
	Temp* (°F) 6" above ground in shade	Start: 55	End: 71
	Wind (mph)	Start: 0	End: 12-15
	% Cloud Cover	Start: 30	End: 75
Area(s) surveyed			
Site Information			
Project Name:			
Location:		UTM Coordinates (NAD 83)	
County:		N:	[PHOTOS? ___]
Quad:		E:	[PHOTOS? ___]
T _____ R _____ S _____		S:	[PHOTOS? ___]
Parcel #:		W:	[PHOTOS? ___]
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CAWR			
RWR			

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VUSol AP bound 20170410SR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

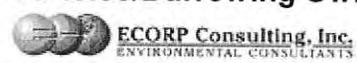
Client: _____

General Information		Weather Data	
Observers:	Time (24 hr)	Start: 0611	End: 1240
J. Renard, L. Dorrough	Temp* (°F) 6" above ground in shade	Start: 38	End: 63
	Wind (mph)	Start: 0-7	End: 0-3
	% Cloud Cover	Start: 50	End: 20
Area(s) surveyed			
Project Area.			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA	N:	[PHOTOS? <input checked="" type="checkbox"/>]	
County: San Bernardino	E:	[PHOTOS? <input checked="" type="checkbox"/>]	
Quad:	S:	[PHOTOS? <input checked="" type="checkbox"/>]	
T _____ R _____ S _____	W:	[PHOTOS? <input checked="" type="checkbox"/>]	
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	%Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:	SE:		
NE:	SW:		
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] <input checked="" type="checkbox"/> [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Crosote Bush scrub			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CAGO	AMRO	Desert Quana	
COXA	SASP	HOTL	Leopard Liz.
AMRO	ATFL	Whiptail	
SASP	TUVU	Side-Blotched Lic.	
NOMO	CHSP	WCSP	

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard



Project #: 2017-062.002

GPS file: VUSAAR buandt 20170410 SR

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign°	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0700	BUOW	B	N/A	465682	3832695	Pot. BUOW entrances. white wash 8" W x 10" H, 6x6 avg 6x6
2 0915	Nest	—	—	465770	3832367	Raven nest in Joshua Tree
3 1223	DT	C	5	466285	3832013	Class 5 carcass, scattered. OLP 20 pieces
4						
5						
6						
7						
8						
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10						
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30						

* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VUSAAR DT BUW041017 KC



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

General Information	Weather Data		
Observers:	Time (24 hr)	Start: _____	End: _____
K. Cornell, P. Wasz	Temp* (°F) <small>6" above ground in shade</small>	Start: _____	End: _____
	Wind (mph)	Start: _____	End: _____
	% Cloud Cover	Start: _____	End: _____

Area(s) surveyed

Project Area (south)

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? ___]

E: _____ [PHOTOS? ___]

S: _____ [PHOTOS? ___]

W: _____ [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 4/10/17

Desert Tortoise/Burrowing Owl Survey

Recorder: P. Wast

Project #: 2017-062.002

GPS file: USCAR DT Burrow 4/10/17-KC



Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign*	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	0700	DKF	Y	465683	3832694	known DKF Den (2 holes) w/5 of old scat
2						
3						
4						
5						
6						
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* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
	A - Foraging		A - signs of predation
	B - Basking		B - No signs of predation
	C - In burrow		
	D - Digging		
	E - Traveling		

Date: 4/11/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VV SOLAR BUOW DT 041117JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0630</u>	End: <u>1235</u>
<u>J. Renard, L. Dorrough</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>43°F</u>	End: <u>70°F</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0</u>
	% Cloud Cover	Start: <u>10</u>	End: <u>30</u>

Area(s) surveyed

Gen-ties + 500-ft buffer (East of Project Area)

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? C]

E: _____ [PHOTOS? C]

S: _____ [PHOTOS? C]

W: _____ [PHOTOS? C]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] (N)

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA Jac Rabbit

NOMO MALL

WCSP AMRD

DCCD LEGD

TUVU Cochonchip

ATPL YHBB

CAGO Horned Lizard

Date: 4/11/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renard

Project #: 2017-062.002

GPS file: WSOLARBUOWDT041117.JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	0700	Nest	—	465794	3831911	Active Raven nest in Joshua tree
2	0900	BUOW	B	460827	3831862	Burrow complex. Ppr. Owl. 4 entrances ~ 6x6 - 6x8 No owl sign kit fox scat.
3	1000	BUOW	B	466738	3831689	2 burrows 8x8" No BUOW sign. Lots of KF scat
4	1000	KIT	B	" ↓ "	" ↓ "	fresh old scat. Old prey remains ↓
5	1220	BIRD	—	466602	3832571	Yellow-headed Blackbird obs. by JR
6						
7						
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30						

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/11/17
GPS File: _____

Desert Tortoise/Burrowing Owl Survey



ECO P Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: _____

General Information	Weather Data		
Observers: <u>P. Wasz, W. Turner</u>	Time (24 hr)	Start: <u>0630</u>	End: <u>1235</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>43</u>	End: <u>74</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0-3</u>
	% Cloud Cover	Start: <u>10</u>	End: <u>40</u>

Area(s) surveyed
Gen - ties

Site Information			
Project Name: <u>Victorville Solar</u>	UTM Coordinates (NAD 83)		
Location: <u>Victorville, CA</u>	N:	[PHOTOS? ___]	
County: <u>San Bernardino</u>	E:	[PHOTOS? ___]	
Quad:	S:	[PHOTOS? ___]	
T: _____ R: _____ S: _____	W:	[PHOTOS? ___]	
Parcel #:			

Physical Characteristics		
Elevation:	Aspect:	Soils:
Land Form*: _____	% Slope: _____	Other: _____
<small>* e.g. mesa, bajada, wash</small>		

Land Uses:	
NW:	SE:
NE:	SW:

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]
Transect Width: _____

Field Observations

Vegetation Communities:
Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 4/11/17

Recorder: P. Wasz

GPS file: _____

Desert Tortoise/Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: _____

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1 0908	DKF	B	known	466829	3831860	4 Known DKF dens lots of old scat
2 0915	DKF	B	Pot	466827	3831755	2 Potential DKF dens
3 0915	BUOW	B	Pot	" "	" "	2 Potential BUOW burrows No sign
4 1140	DKF	B	known	465498	3832827	1 known DKF den some new but mostly old scat
5 1140	BUOW	B	Pot	" "	" "	2 Pot DKF den under fallen tree No sign
6 1212	DKF	B	Pot	465195	3833010	2 Pot BUOW burrow same as above
7 1212	BUOW	B	Pot	" "	" "	
8						
9						
10						
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^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging B - Basking C - In burrow D - Digging E - Traveling		A - signs of predation B - No signs of predation	

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR BUOW DT041217JK



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Power

General Information		Weather Data	
Observers: J. Renaud L. Dorough		Time (24 hr)	Start: 0613 End: 1240
		Temp* (°F) 6" above ground in shade	Start: 48 End: 73
		Wind (mph)	Start: 0-1 End: 4-7
		% Cloud Cover	Start: 0 End: 0
Area(s) surveyed Gen-ties			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA		N:	[PHOTOS? ___]
County: San Bernardino		E:	[PHOTOS? ___]
Quad:		S:	[PHOTOS? ___]
T _____	R _____	W:	[PHOTOS? ___]
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] (N)			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants Creosote Bush scrub, desert wash, developed, disturbed.			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
CDRA	Desert Tortoise (juvie)	Coyote	
BLPH	Calif. Whiptail	GRRO	
GTGR	Jack rabbit	ANHU	
WCSP	Antelope Squirrel		
EUST	PEFA		
ATFL	zebra-tailed lizard		

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

Recorder: J. Renaud



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

GPS file: VVSOLAR BUOWDT041217JR

Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	DKF	-	-	466864	3831183	Coyote-sized burrow - pot DKF; no sign, facing N; 14" w x 16" H
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
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30						

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS A - Foraging B - Basking C - In burrow D - Digging E - Traveling	
1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered		A - signs of predation B - No signs of predation	

Date: 4/12/17

Desert Tortoise/Burrowing Owl Survey

GPS File: VVSOLAR DTBOW 041217.PW



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002
Client: Middle River Power

General Information		Weather Data	
Observers:	Time (24 hr)	Start: 0613	End: 1240
P. Wasz	Temp* (°F) 6" above ground in shade	Start: 48	End: 73
W. Turner	Wind (mph)	Start: 0-1	End: 4-7
	% Cloud Cover	Start: 0	End: 0
Area(s) surveyed			
Gen-tier			
Site Information			
Project Name: Victorville Solar		UTM Coordinates (NAD 83)	
Location: Victorville, CA.		N:	[PHOTOS? <input checked="" type="checkbox"/>
County: San Bernardino		E:	[PHOTOS? <input checked="" type="checkbox"/>
Quad:		S:	[PHOTOS? <input checked="" type="checkbox"/>
T _____	R _____	W:	[PHOTOS? <input checked="" type="checkbox"/>
Parcel #:			
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	% Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:			SE:
NE:			SW:
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] <input checked="" type="checkbox"/> [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Creosote scrub, desert wash, beavertail cactus, barrel cactus.			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
See other team's logs			

Date: 4/12/17
 Recorder: P. Wasz
 GPS file: _____

Desert Tortoise/Burrowing Owl Survey



Project #: 2017-062.002
 Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign°	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	BUOW	B	-	466862	3831183	14" x 16", N aspect, no sign, pot. burrow
2	DT	C	5	466566	3830409	Two bones found under telephone pole, looks like possible DT, photos taken (unlikely DT).
3						
4	PEFA	Obs.	-	466563	3830342	Perched on telephone pole.
5	DT	Obs.	-	466581	3830115	Live baby DT, 2"x2", looked healthy, traveling/digging
6	DT	B	2	466572	3830112	Burrow 2"x1.5"; SE aspect. could be baby DT burrow
7	DT	B	4	466619	3829919	10"x12", S aspect; deteriorated outside, good inside
8	DKF	Pot. Den	-	466619	3829919	10"x12", Pot den, no sign.
9	BUOW	Pot. B.	-	466619	3829919	" Pot burrow, no sign.
10	BUOW	Pot. B.	-	466774	3829881	Large debris pile / concrete pile, no sign.
11						
12						
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30						

° T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

<p>*BURROW / PALLET (Note Aspect)</p> <p>1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)</p>	<p>*SCAT</p> <p>1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber</p>
<p>*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)</p> <p>1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks</p>	<p>*CARCASS</p> <p>A - Foraging B - Basking C - In burrow D - Digging E - Traveling</p> <p>1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered</p>

Date: 4/27/17

Survey Season: Breeding

Survey #: 2

GPS File Name: VVSQAA BUOW 042717SR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client: 002

Middle River Power

General Information	Weather Data				
Observers: J. Renard, A. Aquino		AM		1720	PM
	Time (24 hr)	Start: 0600	End: 1000	Start: 500	End: 1930
	Temp* (°F) <small>6" above ground in shade</small>	Start: 54	End: 64	Start: 68	End: 65
	Wind (mph)	Start: 12-15	End: 10-12	Start: 8-12	End: 4-8
	% Cloud Cover	Start: 15	End: 10	Start: 10	End: 30

Site Information

Project Name: Victorville Solar
 Location: Victorville, CA. Photos Taken? [Y] [N]
 County: San Bernardino Co.
 Area Surveyed: Project Area + buffer

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:
 Plants: Creosote bush scrub

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
 WFIB, CORA, HOLLA, BARS, MODO, ^{LENI} Nighthawk
 Sidewinder
 Whiptail
 Black tail jackrabbit
 Antelope squirrel
 taruHOLA

Comments

Date: 4/27/17
 Survey Season: Breeding
 Survey #: 2
 GPS File Name: _____

Burrowing Owl Survey



ECORP Consulting, Inc.
 ENVIRONMENTAL CONSULTANTS

Project #:
 Client:

General Information	Weather Data				
Observers: <u>Lauren Doughty</u> <u>Wendy Turner</u>	AM		PM		
	Time (24 hr)	Start: <u>0600</u> End: <u>0955</u>	Start: <u>0120</u> End: <u>1930</u>		
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>54</u> End: <u>65</u>	Start: <u>70</u> End: <u>65</u>		
	Wind (mph)	Start: <u>15</u> End: <u>10-12</u>	Start: <u>8-12</u> End: <u>4-8</u>		
	% Cloud Cover	Start: <u>15</u> End: <u>40</u>	Start: <u>10</u> End: <u>30</u>		

Site Information

Project Name: _____

Location: _____ Photos Taken? [Y] [N]

County: _____

Area Surveyed: _____

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Comments

Date: 4/28/17
 Survey Season: Breeding
 Survey #: 2
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

General Information	Weather Data				
Observers: <u>Wendy Turner</u> <u>Lauren Dorrough</u>		AM		PM	
	Time (24 hr)	Start: <u>600</u>	End: <u>1000</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>53</u>	End: <u>64</u>	Start: _____	End: _____
	Wind (mph)	Start: <u>1-4</u>	End: <u>1-3</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>30</u>	End: <u>0</u>	Start: _____	End: _____

Site Information

Project Name: _____

Location: _____ Photos Taken? [Y] [N]

County: _____

Area Surveyed: _____

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Comments

Date: 5/1/17

Survey Season: Breeding

Survey #: 2

GPS File Name: VUSOLARBUOW 20170501 JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client: 002

Middle River Basin

General Information	Weather Data			
Observers: <u>J. Renard</u> <u>W. A. Schroeder</u>	AM		PM	
	Time (24 hr)	Start: <u>0600</u> End: <u>1025</u>	Start: <u>1752</u> End: <u>1900</u>	
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>76</u>	Start: <u>87</u> End: <u>85</u>	
	Wind (mph)	Start: <u>0-1</u> End: <u>0</u>	Start: <u>1-5</u> End: <u>1-3</u>	
	% Cloud Cover	Start: <u>0</u> End: <u>0</u>	Start: <u>0</u> End: <u>0</u>	

Site Information

Project Name: Victorville Solar

Location: Victorville, CA Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Project Area + Golfers

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA, # MODO, BESP, HOLA, Cottared Lizard, NOHA, CA Whiptail, Zebra tail
side-blotched lizard
Desert Spiny

Comments

Date: 5/1/17

Survey Season: Breeding

Survey #: 2

GPS File Name: VV SOLAR BUOW 20170501 BZ

Burrowing Owl Survey



Project #: L017-062

Client: 202

General Information		Weather Data			
Observers:		AM		PM	
<u>W. Turner</u> <u>B. Zitt</u>		Time (24 hr)	Start: <u>0600</u> End: <u>1025</u>	Start: <u>1752</u> End: <u>1900</u>	
		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>76</u>	Start: <u>87</u> End: <u>85</u>	
		Wind (mph)	Start: <u>0-1</u> End: <u>0</u>	Start: <u>1-5</u> End: <u>1-3</u>	
		% Cloud Cover	Start: <u>0</u> End: <u>0</u>	Start: <u>0</u> End: <u>0</u>	

Site Information

Project Name: Victorville Solar

Location: Victorville, CA Photos Taken? [Y] [N]

County: SAN BERNARDINO

Area Surveyed: Project Area + GENTIES

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Comments

Date: 5/2/17

Desert Tortoise/Burrowing Owl Survey

GPS File: WSAARDTBLW 201705 02JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Power

General Information		Weather Data	
Observers: J. Renard A. Schroeder		Time (24 hr)	Start: 0600 End: 12:21
		Temp* (°F) 6" above ground in shade	Start: 53 End: 84
		Wind (mph)	Start: 0-1 End: 0-3
		% Cloud Cover	Start: 0 End: 0
Area(s) surveyed			
Southern Gen-tie.			
Site Information			
Project Name: Victorville Solar			
Location: Victorville, Ca.		UTM Coordinates (NAD 83)	
County: SB.		N:	[PHOTOS? ___]
Quad:		E:	[PHOTOS? ___]
T _____	R _____	S:	[PHOTOS? ___]
Parcel #:		W:	[PHOTOS? ___]
Physical Characteristics			
Elevation:	Aspect:	Soils:	
Land Form*:	%Slope:	Other:	
* e.g. mesa, bajada, wash			
Land Uses:			
NW:		SE:	
NE:		SW:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] [N]			
Transect Width:			
Field Observations			
Vegetation Communities:			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
BTSP, Mojave Green, Antelope ground squirrel, COHA, ATFL, Desert Tortoise Zebra tail, CA Whiptail, Lark sparrow, COHB, POWA, LENI			

Date: 5/2/17

Desert Tortoise/Burrowing Owl Survey

Recorder: A. Schroeder

GPS file: VUSaAR DTBuow 20170502JR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: _____

Client: _____

Desert Tortoise/Burrowing Owl Sign							
Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0807	DT	B	2	467182	3829380	13" x 6" x 18", No sign, facing N, under pencil cholla
2	0836	NEST	-	-	467119	3829339	BTSP Nest in pencil cholla, Feeding young
3	0903	BUOW	B		467131	3829220	8'x6", North Aspect, no sign
4	0921	DT	B	2	466874	3829613	12" x 5", No sign, NW Aspect
5	0933	DT	S	1	466841	3829593	2 pieces scat, 70 ft SE from live tortoises mating ↳ more scat in the vicinity
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 5/2/2017

Desert Tortoise/Burrowing Owl Survey

Recorder: BZ



Project #: 2017-062.002

GPS file: VV Solar DT BUOW 20170602WT

Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)
1	0640	BUOW		466963	3828216	Culvert, corrugated pipe 16" x 18" diameter - NO sign, potential E/W aspect
2	0620	BUOW		466962	3828259	10x10" burrow north facing, partially collapsed under creosote
3	0807	DT	2	467150	3829376	6cm L x 1cm diameter 30m away from burrows
4	0842	DT/BUOW	5	467175	3829262	potential burrow, class v - under creosote bush, base of hillside N aspect
5	0930	DT	1	466834	3829592	2 Live Tortoise mating ♂ smaller than ♀, ♂ ~ 10" CL, 6" D, 8" CW → slight damage to back ♀ ~ 12" CL, 7" D, 10" CW → slight damage to back
6						♂ also has damage to front legs scales rubbed/discolored.
7	0954	DT	1	466867	3829573	trail of 5 pieces of scat
8	1015	LASP	NEST ACTIVE	466924	3829031	3 eggs in nest (Lark sparrow)
9	1025	BUOW/KITEFOX	B potential for BUOW	467014	3829215	Good condition, no recent use this season, no sign of BUOW. Kitefox scat present.
10	1047	DT	1	466846	3829477	Good condition, tracks/scat LARGE HILL SIDE, midway up 16" base, 8" height 5' back then turns N aspect
11						
12						
13						
14						
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27						
28						
29						
30						

* T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

<p>*BURROW / PALLET (Note Aspect)</p> <ol style="list-style-type: none"> Currently active, w/tortoise or recent sign Good condition, definitely tortoise, no evidence of recent use Deteriorated condition (describe), definitely tortoise Good condition, possibly tortoise (describe) Deteriorated condition, possibly tortoise (describe) 	<p>*SCAT</p> <ol style="list-style-type: none"> Wet or freshly dried, obvious odor Dry w/glaze and some odor, no bleaching, dark brown Dry, no glaze/odor, light brown, tightly packed, signs of bleaching Dry, very light brown to yellow, loose material; scaly appearance Bleached or consisting only of plant fiber
<p>*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)</p> <ol style="list-style-type: none"> Healthy URTD Shell Cracked Peeling scutes Ticks 	<p>*CARCASS</p> <ol style="list-style-type: none"> Fresh or putrid Normal color, scutes adhered to bone Scutes peeled off bone Shell bone is falling apart; growth rings on scutes are peeling Disarticulated and scattered

Date: 5/3/17

Desert Tortoise/Burrowing Owl Survey

GPS File: WV solar dtbuow 20170503SR



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062.002

Client: Middle River Paver

General Information	Weather Data		
Observers:	Time (24 hr)	Start <u>0600</u>	End: <u>1100</u>
<u>Jon Renard</u>	Temp* (°F)	Start: 57 <u>57</u>	End: <u>83°</u>
<u>Wendy Turner</u>	<small>6" above ground in shade</small>	Wind (mph)	End: <u>2-5</u>
		Start: <u>0-3</u>	End: <u>0</u>
	% Cloud Cover	Start: <u>15</u>	

Area(s) surveyed

Site Information

Project Name: _____

Location: _____

County: _____

Quad: _____

T _____ R _____ S _____

Parcel #: _____

UTM Coordinates (NAD 83)

N: _____ [PHOTOS? ___]

E: _____ [PHOTOS? ___]

S: _____ [PHOTOS? ___]

W: _____ [PHOTOS? ___]

Physical Characteristics

Elevation: _____ Aspect: _____ Soils: _____

Land Form*: _____ %Slope: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

NW: _____ SE: _____

NE: _____ SW: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: _____

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Date: 5/3/17

Desert Tortoise/Burrowing Owl Survey

Recorder: Wendy Turner

Project #: 2017-067.002

GPS file: NSolar-DTBUOW-20170503JRC



Client: Middle River Power

Desert Tortoise/Burrowing Owl Sign

Time (24 hr)	DT or BUOW	Sign ^o	Class*	Easting UTM NAD83	Northing UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements, behavior, etc.)	
1	0620	BUOW	B				
2				466243	3830326	3 burrows, W facing, No sign, 2x5in, decent condition, hillside drainage, CBS	
3	0702	DT	B	1	466348	3830413	Active burrow w/ class 1 scat + tracks in hillside ravine/wash, saltbush scrub, N facing, 16x2in 3ft deep, turns R. out of sight. (10+ scats)
4							
5							
6							
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30							

^o T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

<p>*BURROW / PALLET (Note Aspect)</p> <p>1 - Currently active, w/tortoise or recent sign</p> <p>2 - Good condition, definitely tortoise, no evidence of recent use</p> <p>3 - Deteriorated condition (describe), definitely tortoise</p> <p>4 - Good condition, possibly tortoise (describe)</p> <p>5 - Deteriorated condition, possibly tortoise (describe)</p>		<p>*SCAT</p> <p>1 - Wet or freshly dried, obvious odor</p> <p>2 - Dry w/glaze and some odor, no bleaching, dark brown</p> <p>3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching</p> <p>4 - Dry, very light brown to yellow, loose material; scaly appearance</p> <p>5 - Bleached or consisting only of plant fiber</p>	
<p>*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height)</p> <p>1 - Healthy</p> <p>2 - URTD</p> <p>3 - Shell Cracked</p> <p>4 - Peeling scutes</p> <p>5 - Ticks</p>		<p>*CARCASS</p> <p>1 - Fresh or putrid</p> <p>2 - Normal color, scutes adhered to bone</p> <p>3 - Scutes peeled off bone</p> <p>4 - Shell bone is falling apart; growth rings on scutes are peeling</p> <p>5 - Disarticulated and scattered</p>	
<p>A - Foraging</p> <p>B - Basking</p> <p>C - In burrow</p> <p>D - Digging</p> <p>E - Traveling</p>		<p>A - signs of predation</p> <p>B - No signs of predation</p>	

Date: 5/31/17

Survey Season: Breeding

Survey #: 3

GPS File Name: VVSOLAR BUDW 20170531 JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client:
Middle River
Power

General Information	Weather Data				
Observers:	AM		PM		
J. Renard	Time (24 hr)	Start: 0600	End: 1000	Start: 0600	End: 1945
J. Aguirre	Temp* (°F) 6" above ground in shade	Start: 57	End: 75	Start: 76	End: 75
	Wind (mph)	Start: 0	End: 3-5	Start: 3-5	End: 0-3
	% Cloud Cover	Start: 40	End: 90	Start: 95	End: 85

Site Information

Project Name: Victorville Solar
 Location: Victorville, CA. Photos Taken? [Y] [N]
 County: San Bernardino
 Area Surveyed: Project Area + 500-ft buffer

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
 * e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: ²⁰ 40 meters

Field Observations

Vegetation Communities:
 Plants
 Creosote bush scrub

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
 CORA, SA PH, Jack rabbit, Whiptail, leopard lizard, patch-rose snail

Comments

Date: 5/31/2017

Survey Season: Breeding

Survey #: 3

GPS File Name: VVSOLAR BUOW 20170531 WT

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client: Middle River Power

General Information	Weather Data			
Observers: W. Turner A. Schroeder		AM		PM
	Time (24 hr)	Start: 0600	End: 1000	Start: 1800 End: 1945
	Temp* (°F) <small>6" above ground in shade</small>	Start: 57	End: 75	Start: 76 End: 73
	Wind (mph)	Start: 0	End: 0	Start: 3-5 End: 0-3
	% Cloud Cover	Start: 40	End: 100	Start: 95 End: 85

Site Information

Project Name: Victorville Solar
 Location: Victorville, CA
 County: San Bernardino
 Area Surveyed: Project Area + 500 ft buffer

Photos Taken? [Y] [N]

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: ²⁰ 40 meters

Field Observations

Vegetation Communities:
Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
 COPA, ~~the~~ Western whiptail, Mojave Patchnose snake, HOLA, SAPH, Side blotted lizard
 Blacktailed jack rabbit, MODO

Comments

Date: 6/1/17

Survey Season: Breeding

Survey #: 3

GPS File Name: VVSOLAR BUOW 20170601JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client:
Middle River Power

General Information	Weather Data				
Observers: J. Renard J. Aguirre		AM		PM	
	Time (24 hr)	Start: 0545	End: _____	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: 53	End: _____	Start: _____	End: _____
	Wind (mph)	Start: 0	End: _____	Start: _____	End: _____
	% Cloud Cover	Start: 0	End: _____	Start: _____	End: _____

Site Information	
Project Name:	Victorville Solar
Location:	Victorville, CA. Photos Taken? <input checked="" type="checkbox"/> [Y] <input type="checkbox"/> [N]
County:	San Bernardino
Area Surveyed:	Project Area + 500-ft buffer

Physical Characteristics	
Elevation:	Soils:
Land Form*: <small>* e.g. mesa, bajada, wash</small>	Other:
Land Uses:	
N:	S:
E:	W:
Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]	
Transect Width: 20 / 40 meters	

Field Observations
Vegetation Communities:
Plants Creosote bush scrub
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)] CORA

Comments

Date: 6/11/17
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: VVSolar BUOW 20170601WT

Project #: 2017-06102
 Client:
Middle River Power

General Information	Weather Data				
		AM		PM	
Observers: <u>S. Kenard</u> <u>W. Turner</u> <u>A. Schroeder</u> <u>S. Aguirre</u>	Time (24 hr)	Start: <u>0600</u>	End: <u>1015</u>	Start: <u>1755</u>	End: <u>1949</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>53</u>	End: <u>71</u>	Start: <u>84</u>	End: <u>78</u>
	Wind (mph)	Start: <u>0</u>	End: <u>0-1</u>	Start: <u>0-1</u>	End: <u>7-10</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>1</u>	End: <u>0</u>

Site Information

Project Name: Victorville solar

Location: _____ Photos Taken? [Y] [N]

County: _____

Area Surveyed: _____

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 20 / ~~40~~ meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CACW, COMA, SAPH, Ash throated Flycatcher, WETA, HOPI, MODO,
HOLA, VADN, Coahuila (ATFL), western Whiptail

Comments

Date: 6/2/17
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: W Solar B N W 20170602 JP

Burrowing Owl Survey



Project #: 2017-062.c02
 Client: M. de River Paver

General Information	Weather Data				
Observers: <u>J. Aguirre</u> <u>J. Renard</u>		AM		PM	
	Time (24 hr)	Start: <u>0550</u>	End: <u>0940</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>57</u>	End: <u>77</u>	Start: _____	End: _____
	Wind (mph)	Start: <u>0</u>	End: <u>0</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: _____	End: _____

Site Information

Project Name: W Solar
 Location: Victorville, CA Photos Taken? [Y] [N]
 County: San Bernardino
 Area Surveyed: ben-tie

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 29 meters

Field Observations

Vegetation Communities:
 Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
LOSH (see back)

Comments

Date: 6/2/17
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: VN Sclar Buaw 20170602wt

Burrowing Owl Survey



ECORP Consulting, Inc.
 ENVIRONMENTAL CONSULTANTS

2017-062.002
 Project #:
 Client:
Middle River Power

General Information	Weather Data				
Observers: <u>J. Renard</u> <u>W. Turner</u> <u>A. Schroeder</u> <u>J. Aguienne</u>		AM		PM	
	Time (24 hr)	Start: <u>0600</u>	End: <u>0937</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>57</u>	End: <u>77</u>	Start: _____	End: _____
	Wind (mph)	Start: <u>0</u>	End: <u>0</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: _____	End: _____

Site Information

Project Name: Victorville Solar

Location: _____ Photos Taken? [Y] [N]

County: _____

Area Surveyed: _____

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

HOLA, Antelope ground squirrel, COPIA, Western whiptail

Comments

Date: 6/5/17

Survey Season: Breeding

Survey #: 3

GPS File Name: VNSolar BUOW 20170605 JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2017-062.002

Project #:

Client:

Middle River Power

General Information	Weather Data				
		AM		PM	
Observers: <u>J. Renard</u> <u>W. Turner</u>	Time (24 hr)	Start: <u>0545</u>	End: <u>0945</u>	Start: <u>1745</u>	End: <u>1925</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>62</u>	End: <u>82</u>	Start: <u>91</u>	End: <u>85</u>
	Wind (mph)	Start: <u>0</u>	End: <u>1-3</u>	Start: <u>8-12</u>	End: <u>3-5</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>0</u>	End: <u>0</u>

Site Information

Project Name: Victorville Solar

Location: Victorville, CA

County: San Bernardino

Area Surveyed: Gen-tie

Photos Taken? [Y] [N]

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

20

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Creosote bush scrub

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

NRWS cottontail

CORA Black-tailed Jackrabbit

CAQU whiptail

MODO ROWR

GTGR AMLE

MALL

RWBL

NOMO

Comments

Date: 6/6/17

Survey Season: Breeding

Survey #: 3

GPS File Name: WSolar/Buad 20170606 JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2017-062.002/002

Project #:

Client:

Middle River Power

General Information	Weather Data				
		AM		PM	
Observers: <u>J. Renard</u> <u>W. Turner</u>	Time (24 hr)	Start: <u>0545</u>	End: <u>1045</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>59</u>	End: <u>89</u>	Start: _____	End: _____
	Wind (mph)	Start: <u>2-4</u>	End: <u>0-1</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>10</u>	End: <u>20</u>	Start: _____	End: _____

Site Information

Project Name: Victorville Solar

Location: _____ Photos Taken? [Y] [N]

County: _____

Area Surveyed: _____

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: ²⁶~~40~~ meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA WOLA

LENI BTSP

AMLE

BLPH

zebra tail

leopard lizard

Deto (See back)

Comments

Date: 6/26/2017

Survey Season: Breeding

Survey #: 4

GPS File Name: WSOLAR BUOW 2017 06 26 JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client: 002

Middle River Basin

General Information	Weather Data				
Observers: <u>J. Renard</u> <u>L. (Dorough) Simpson</u> <u>T. Dee</u>		AM		PM	
	Time (24 hr)	Start: <u>0525</u>	End: <u>0940</u>	Start: <u>1750</u>	End: <u>1930</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>65</u>	End: <u>92</u>	Start: <u>97</u>	End: <u>90</u>
	Wind (mph)	Start: <u>0</u>	End: <u>1-5</u>	Start: <u>8-12</u>	End: <u>3-12</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>0</u>	End: <u>0</u>

Site Information	
Project Name: <u>Victorville Solar</u>	
Location: <u>Victorville, CA</u>	Photos Taken? <input checked="" type="checkbox"/> [Y] <input type="checkbox"/> [N]
County: <u>San Bernardino</u>	
Area Surveyed: <u>Project Area + 500-ft buffer</u>	

Physical Characteristics	
Elevation:	Soils:
Land Form*: <small>* e.g. mesa, bajada, wash</small>	Other:
Land Uses:	
N:	S:
E:	W:
Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]	
Transect Width: <u>20</u> meters	

Field Observations
Vegetation Communities:
Plants <u>Creosote Bush Scrub</u>
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
<u>Black-tailed Jackrabbit,</u> <u>whiptail</u> <u>LENI</u> <u>white ankle squirrel</u>
<u>HOLA</u> <u>LISH (466091 E, 3833873A)</u>
<u>Cactus wren</u> <u>CORA</u>

Comments

Date: 6/28/17

Survey Season: Breeding

Survey #: 4

GPS File Name: WSolar Bvow 20170628

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #:

Client:

General Information	Weather Data				
Observers: JR LS TD		AM		PM	
	Time (24 hr)	Start: 0545	End: 0945	Start: 1830	End: 1955
	Temp* (°F) <small>6" above ground in shade</small>	Start: 67	End: 84	Start: 91	End: 83
	Wind (mph)	Start: 0-1	End: 3-8	Start: 3-8	End: 1-5
	% Cloud Cover	Start: 0	End: 0	Start: 0	End: 0

Site Information

Project Name: Victorville Solar
 Location: Victorville
 County: San Bernardino
 Area Surveyed: project area + 500 ft buffer

Photos Taken? [Y] [N]

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 20 / 40 meters

Field Observations

Vegetation Communities:
 Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

merlin (same as yesterday)
 red racer
 HDLA
 verdin
 WRA

jack rabbit
 white antelope ground squirrel
 ATFL

Comments

Date: 6/29/17

Survey Season: Breeding

Survey #: 4

GPS File Name: WSOLAR BHOW 20170629JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #: 2017-062

Client: 002

Middle River Area

General Information	Weather Data			
Observers: <u>J. Renard</u> <u>L. Simpson</u> <u>T. Dee</u>	AM		PM	
	Time (24 hr)	Start: <u>0555</u> End: <u>0945</u>	Start: <u>1200</u> End: <u>1700</u>	
	Temp* (°F) <small>8" above ground in shade</small>	Start: <u>64</u> End: <u>80</u>	Start: <u>95</u> End: <u>90</u>	
	Wind (mph)	Start: <u>0-2</u> End: <u>1-5</u>	Start: <u>5-10</u> End: <u>3-7</u>	
	% Cloud Cover	Start: <u>0</u> End: <u>0</u>	Start: <u>0</u> End: <u>0</u>	

Site Information

Project Name: Victorville Solar

Location: Victorville, CA Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Gen-tie

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 20 / 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA HOLA Bell's sparrow

MODO desert tortoise pocket mouse

Coyote zebra-tail lizard

jack rabbit HOFI

western meadowlark white-antelope ground squirrel

~~_____~~

Comments

Date: 6/30/17

Survey Season: Breeding

Survey #: 4

GPS File Name: VV solar BUaw 20170629JR

Burrowing Owl Survey



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Project #:

Client:

General Information		Weather Data			
Observers: J. Renard L. Simpson T. Dee			AM		PM
	Time (24 hr)	Start: 0555	End: 1030	Start: _____	End: _____
	Temp* (°F) <small>* above ground in shade</small>	Start: 63	End: 91	Start: _____	End: _____
	Wind (mph)	Start: 0-2	End: 0-2	Start: _____	End: _____
	% Cloud Cover	Start: 0	End: 0	Start: _____	End: _____

Site Information

Project Name: Victorville solar
 Location: Victorville
 County: San Bernardino
 Area Surveyed: Gen-tie

Photos Taken? [Y] [N]

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: ²⁰~~40~~ meters

Field Observations

Vegetation Communities:
Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

desert kit fox
 desert tortoise
 HOLA
 HOFI
 CORA
 white antelope ground squirrel

jackrabbit
 whiptail
 SAPH
 MODO
 CAWR
 LENI

Comments

Date: 4/9/18
 Survey Season: Breeding
 Survey #: 1 (Monday)
 GPS File Name: Collector



2017-062-003
 Project #: 0001/1007/21
 Client: Middle River Power

General Information	Weather Data			
	AM		PM	
Observers: <u>JR, RV, JA, TD</u>	Time (24 hr)	Start: <u>0715</u> End: <u>1010</u>	Start: <u>1715</u> End: <u>1900</u>	
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>68</u>	Start: <u>83</u> End: <u>79</u>	
	Wind (mph)	Start: <u>0-1</u> End: <u>0-1</u>	Start: <u>1-3</u> End: <u>0-1</u>	
	% Cloud Cover	Start: <u>0</u> End: <u>10</u>	Start: <u>0</u> End: <u>0</u>	

Site Information

Project Name: High Desert Solar
 Location: Victorville Photos Taken? [Y] [N]
 County: San Bernardino
 Area Surveyed:

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: ²⁰/~~40~~ meters

Field Observations

Vegetation Communities: CBS, AMBDUM scrub
 Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CERA
~~Kit fox (scat, den, burrow, tracks)~~ Blainsville horned lizard (31.634), -117.3819
~~Bufo (petrels, white wash)~~ VERD
~~by butterflies~~
HOLA
Sage thrasher
black-tailed jack rabbit
CA whip tail

Comments

Date: 4/10/18
 Survey Season: Breeding
 Survey #: 1 (Tuesday)
 GPS File Name: Collector

Burrowing Owl Survey



Project #: 2017-062 02
 Client: Middle River Power

General Information	Weather Data				
		AM		PM	
Observers: <u>JR, RV, TD, JA</u>	Time (24 hr)	Start: <u>0630</u>	End: <u>1000</u>	Start: <u>1705</u>	End: <u>1900</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u>	End: <u>70</u>	Start: <u>82</u>	End: <u>72</u>
	Wind (mph)	Start: <u>1-3</u>	End: <u>1-3</u>	Start: <u>10-12</u>	End: <u>6-8</u>
	% Cloud Cover	Start: <u>30</u>	End: <u>10</u>	Start: <u>5</u>	End: <u>5</u>

Site Information

Project Name: HDS 50 MW Expansion

Location: Victorville, CA Photos Taken? [Y] [N]

County: SB County

Area Surveyed: 50 MW Expansion

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: Vacant S: vacant (George Air Force Base)

E: Vacant W: Vacant

Disturbances on Site: [e.g. tracks (vehicle, human, livestock), trash, dump sites, blading; other]
Vehicle tracks.

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

HOLA, COBA, black-tailed leucorabbit, WCSP, BTSP, Savannah Sparrow.
white-tailed Antelope squirrel, BTSP, CA whiptail, Lesser nighthawk, common side-blotched lizard
Bell's sparrow, RTHA

Comments

Date: 4/11/18
 Survey Season: Breeding
 Survey #: 1 (wed)
 GPS File Name: Collector

Burrowing Owl Survey



2017-062-003
 1002/21
 Project #:
 Client: MRP

General Information	Weather Data				
		AM		PM	
Observers: <u>JR, RV, JA, TD</u>	Time (24 hr)	Start: <u>0715</u>	End: <u>1800</u>	Start: <u>1615</u>	End: <u>1915</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>59</u>	End: <u>73</u>	Start: <u>76</u>	End: <u>70</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0-2</u>	Start: <u>16-12</u>	End: <u>5-7</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>0</u>	End: <u>20</u>

Site Information

Project Name: High Desert Solar
 Location: Victorville Photos Taken? [Y] [N]
 County: San Bernardino
 Area Surveyed:

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
 * e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 20 meters

Field Observations

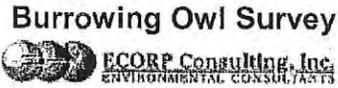
Vegetation Communities:
 Plants: CBS

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

<u>CORA</u>	<u>Black-tailed jackrabbit</u>	<u>White-tailed Antelope squirrel</u>
<u>Savannah Sparrow</u>	<u>KIU</u>	<u>PRFA (34.6070, -117.3616)</u>
<u>TRSW</u>	<u>ANHU</u>	<u>↳ obs. perched on creosote snag</u>
<u>Coyote</u>	<u>BTSP</u>	<u>WESP</u>
<u>SAPH</u>	<u>Common side-blotched lizard</u>	<u>LOSH (34.6049, -117.3630)</u>
<u>WEME</u>	<u>CA Quail</u>	<u>↳ obs. perched on creosote in Desert wash (Adult)</u>

Comments

Date: 4/12/18
 Survey Season: Breeding
 Survey #: 1 (Thursday)
 GPS File Name: Collector



Project #: 2017-062-003
 Client: MRP

General Information	Weather Data				
Observers:	AM		PM		
	Time (24 hr)	Start: <u>0615</u>	End: <u>1015</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>48°</u>	End: <u>49°</u>	Start: _____	End: _____
	Wind (mph)	Start: <u>5-7</u>	End: <u>12</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>15</u>	End: <u>0</u>	Start: _____	End: _____

Site Information

Project Name: HDS SO MW Expansion

Location: Victorville, CA Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Genie

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 20 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA
Black-tailed Jackrabbit
WCSP
Savannah Sparrow
WEKI

Comments

Date: 5/14/18
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062.003
 Client: MRD



General Information		Weather Data	
Observers:		Time (24 hr)	Start: <u>0610</u> End: <u>1330</u>
J. Renard L. Simpson T. Dee A. Schroeder		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>76</u>
		Wind (mph)	Start: <u>0-2</u> End: <u>0-2</u>
		% Cloud Cover	Start: <u>0</u> End: <u>1</u>
Area(s) surveyed			
<u>solar farm - northwest 2/3 smaller solar farm rectangle; 2/3 top/northern most portion of the largest 2/3 southern rectangle</u>			
Site Information			
Project Name: <u>High Desert Solar</u>		Photos Taken? <input checked="" type="radio"/> [Y] [N]	
Location: <u>Adelanto</u>		County: <u>San Bernardino County</u>	
Physical Characteristics			
Soils:		Other:	
Land Form*: <small>* e.g. mesa, bajada, wash</small>			
Land Uses (residential, commercial, open space, etc.):			
N:		E:	
S:		W:	
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]			
Is site staked or marked? [Y] [N]			
Transect Width: 10-meter			
Field Observations			
Vegetation Communities: <u>creosote bush scrub</u>			
Plants			
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]			
<u>Common raven</u> <u>Horned lark</u> <u>Ash-throated flycatcher</u> <u>Swainson's hawk (34.6335°, -117.3801°)</u> <u>Black-headed grosbeak</u> <u>verdin</u> <u>desert horned lizard</u> <u>loggerhead shrike (34.6371°, -117.3811°)</u>		<u>wilson's warbler</u> <u>warbling vireo</u> <u>white-tailed antelope squirrel</u> <u>long-nosed leopard lizard</u> <u>Great Basin whiptail</u> <u>western side-blotched lizard</u> <u>mourning dove</u> <u>lesser nighthawk</u>	

Date: 5/15/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003

Client: MRP



General Information	Weather Data		
Observers: J. Renaud L. Simpson T. Dec A. Schroeder	Time (24 hr)	Start: <u>0625</u>	End: <u>1320</u>
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>52</u>	End: <u>78</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>0-2</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>

Area(s) surveyed
Solar farm - middle of southern 1/3 largest solar farm rectangle

Site Information
 Project Name: High Desert Solar
 Location: Adelanto, CA Photos Taken? [Y] [N]
 County: San Bernardino

Physical Characteristics
 Soils:
 Land Form*: Other:
 * e.g. mesa, bajada, wash

Land Uses (residential, commercial, open space, etc.):
 N: E:
 S: W:

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]
 Is site staked or marked? [Y] [N]
 Transect Width: 10-meter

Field Observations
 Vegetation Communities: CBS

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
HOLA, CORA, ATFL, SWHA, WAVI, WIWA, BTSP, BESP, LENI, black-tailed jackrabbit, BTGR, gull sp., YRWA, SAH, Great Basin whiptail, desert horned lizard, western side-blotched lizard

Date: 5/16/18
 GPS File: collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062.003
 Client: MRP



General Information		Weather Data																									
Observers: J. Renard L. Simpson T. Dee A. Schroeder		Time (24 hr)	Start: <u>0625</u> End: <u>1330</u>																								
		Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u> End: <u>78</u>																								
		Wind (mph)	Start: <u>0-1</u> End: <u>2-4</u>																								
		% Cloud Cover	Start: <u>0</u> End: <u>0</u>																								
Area(s) surveyed																											
Solar farm - bottom/southern most section of the largest $\frac{1}{2}$ southern rectangle. Buw buffer																											
Gen-tie -																											
Site Information																											
Project Name: <u>High Desert solar</u>		Photos Taken? <input checked="" type="checkbox"/> [Y] [N]																									
Location: <u>Adelanto CA</u>																											
County: <u>San Bernardino</u>																											
Physical Characteristics																											
Soils:		Other:																									
Land Form*: <small>* e.g. mesa, bajada, wash</small>																											
Land Uses (residential, commercial, open space, etc.):																											
N:		E:																									
S:		W:																									
Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]																											
Is site staked or marked? [Y] [N]																											
Transect Width: 10-meter																											
Field Observations																											
Vegetation Communities: <u>CBS</u>																											
Plants																											
Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]																											
<table border="0"> <tr> <td>cactus wren</td> <td>wilson's warbler</td> <td>white-tailed antelope</td> </tr> <tr> <td>black-throated sparrow</td> <td>mourning dove</td> <td>squirrel</td> </tr> <tr> <td>lesser nighthawk</td> <td>desert tortoise (see pg. 2)</td> <td>Great basin whiptail</td> </tr> <tr> <td>black-tailed jackrabbit</td> <td>Killdeer</td> <td>western side-blotched lizard</td> </tr> <tr> <td>warbling vireo</td> <td>Bell's sparrow</td> <td>western zebra-tailed lizard</td> </tr> <tr> <td>common raven</td> <td>Say's Phoebe</td> <td></td> </tr> <tr> <td>horned lark</td> <td>Townsend's warbler</td> <td></td> </tr> <tr> <td>ash-throated flycatcher</td> <td>ladder-backed woodpecker</td> <td></td> </tr> </table>				cactus wren	wilson's warbler	white-tailed antelope	black-throated sparrow	mourning dove	squirrel	lesser nighthawk	desert tortoise (see pg. 2)	Great basin whiptail	black-tailed jackrabbit	Killdeer	western side-blotched lizard	warbling vireo	Bell's sparrow	western zebra-tailed lizard	common raven	Say's Phoebe		horned lark	Townsend's warbler		ash-throated flycatcher	ladder-backed woodpecker	
cactus wren	wilson's warbler	white-tailed antelope																									
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ash-throated flycatcher	ladder-backed woodpecker																										

Date: 5/16/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003
 Client: MRP



Desert Tortoise/Burrowing Owl Sign						
Time (24 hr)	DT or BUOW	Sign° (DT only)	Class* (DT only)	Eastings UTM NAD83	Northings UTM NAD83	Comments (note aspect of burrows, Unique DT ID, measurements [e.g., width of scat], behavior, etc.)
0824	DT	T 3 B	C/1	34.6202	-117.3671	1 large adult unk. sex, size, 3 health in burrow face down 3 away from entrance. burrow 16" wide x 9" tall > 3' deep
0834	DT	B	1	34.6201	-117.3667	18" wide x 7" tall > 3' deep burrow facing SE with 1 piece of class 2 scat inside burrow 3 5 pieces of class 3 outside
0839	DT	S	4	34.620913	-117.36653147	2 pieces
0939	DT	B	3	34.61932121	-117.36741744	12" wide x 5" tall > 2' deep in deteriorated condition, debris inside, not used recently. old BUOW pellets, DKF scat 3 coyote scat present
1262	DKF			34.6219776	-117.361484	DKF known den. scat present in multiple pieces. burrow is coyote-size 20" tall x 10" wide > 4' deep

← previously marked as Dist
 ← facing south

° T - tortoise, B - burrow, P - Pallet, S - scat, Tr - tracks, C - carcass, O - other (specify)

*BURROW / PALLET (Note Aspect) 1 - Currently active, w/tortoise or recent sign 2 - Good condition, definitely tortoise, no evidence of recent use 3 - Deteriorated condition (describe), definitely tortoise 4 - Good condition, possibly tortoise (describe) 5 - Deteriorated condition, possibly tortoise (describe)		*SCAT 1 - Wet or freshly dried, obvious odor 2 - Dry w/glaze and some odor, no bleaching, dark brown 3 - Dry, no glaze/odor, light brown, tightly packed, signs of bleaching 4 - Dry, very light brown to yellow, loose material; scaly appearance 5 - Bleached or consisting only of plant fiber	
*LIVE TORTOISE (MCL, Max Width, Width at 7/8 Marginal, Height) 1 - Healthy 2 - URTD 3 - Shell Cracked 4 - Peeling scutes 5 - Ticks		*CARCASS 1 - Fresh or putrid 2 - Normal color, scutes adhered to bone 3 - Scutes peeled off bone 4 - Shell bone is falling apart; growth rings on scutes are peeling 5 - Disarticulated and scattered	
A - Foraging	B - Basking	C - In burrow	D - Digging
E - Traveling	A - signs of predation	B - No signs of predation	

Date: 5/17/2018
 GPS File: Collector

Desert Tortoise/Burrowing Owl Survey

Project #: 2017-062-003
 Client: MRP



General Information	Weather Data		
Observers:	Time (24 hr)	Start: <u>0625</u>	End: <u>1200</u>
<u>J. Renard</u> <u>L. Simpson</u> <u>J. Aguirre</u> <u>T. Dee</u> <u>A. Schroeder</u>	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>50</u>	End: <u>72</u>
	Wind (mph)	Start: <u>0-1</u>	End: <u>1-3</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>

Area(s) surveyed

Gen-tie 3 buffers

Site Information

Project Name: High Desert Solar
 Location: Adelanto, CA Photos Taken? [Y] [N]
 County: San Bernardino

Physical Characteristics

Soils:
 Land Form*: Other:
 * e.g. mesa, bajada, wash

Land Uses (residential, commercial, open space, etc.):

N: E:
 S: W:

Disturbances on Site: [e.g. tracks (vehicle, human, livestock, dog); trash; dump sites; bullet shells; blading; ravens; other]

Is site staked or marked? [Y] [N]

Transect Width: 10-meter

Field Observations

Vegetation Communities: CBS

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

<u>SAPH</u>	<u>WAVI</u>	<u>white-tailed antelope squirrel</u>
<u>gull sp.</u>	<u>WTSW</u>	<u>black-tailed jackrabbit</u>
<u>CORA</u>	<u>EVST</u>	<u>western side-blotch lizard</u>
<u>MALL</u>	<u>VERD</u>	<u>long-nosed leopard lizard</u>
<u>HOFI</u>	<u>KILL</u>	<u>great basin whiptail</u>
<u>MODU</u>	<u>ATFL</u>	<u>NOSH</u>
<u>WIWA</u>	<u>TOWA</u>	<u>COOT</u>
<u>GTGR</u>		<u>California ground squirrel</u>

Date: 6/4/2018
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: IPAD



2017-062.003/002/21
 Project #:
 Client: MRP

General Information	Weather Data				
		AM		PM	
Observers: L. Simpson J. Aquino K. Hampton A. Schroeder	Time (24 hr)	Start: <u>0536</u>	End: <u>1609</u>	Start: <u>1815</u>	End: <u>2015</u>
	Temp* (°F) <small>* above ground in shade</small>	Start: <u>65</u>	End: <u>89</u>	Start: <u>89</u>	End: <u>82</u>
	Wind (mph)	Start: <u>0</u>	End: <u>0-5</u>	Start: <u>2-8</u>	End: <u>1-5</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>5</u>	Start: <u>40</u>	End: <u>30</u>

Site Information

Project Name: High Desert Solar

Location: Victorville Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Main solar field in SE

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

See other datasheet for plant + wildlife information

Comments

Date: 6/4/18
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: Ipads

Burrowing Owl Survey



2017-062.003/002/21
 Project #:
 Client: MRP

General Information	Weather Data				
Observers: <u>Greg Hampton</u> <u>Lauren Simpson</u> <u>Jenny Azarite</u> <u>Adam Schroeder</u>		AM		PM	
	Time (24 hr)	Start: <u>0536</u>	End: <u>1000</u>	Start: <u>1815</u>	End: <u>2015</u>
	Temp* (°F) <small>0' above ground in shade</small>	Start: <u>65°</u>	End: <u>89°</u>	Start: <u>89</u>	End: <u>87</u>
	Wind (mph)	Start: <u>0-3</u>	End: <u>0-5</u>	Start: <u>2-8</u>	End: <u>1-5</u>
	% Cloud Cover	Start: <u>0%</u>	End: <u>5%</u>	Start: <u>40</u>	End: <u>30</u>

Site Information

Project Name: High Desert Solar

Location: Adelanto/Victorville Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Main Solar area in SE

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants Lar tri, Yuc bro, Amb dum

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA, ATFL, SAPA, HOLA, HOFI, LENI, CAKI

Whiptail lizard - Leopard lizard

Black-tailed Jackrabbit

Desert Iguana

Side-blotch lizard

Comments

Date: 5/5/18
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: IPAD



2017-062-003/002/21
 Project #:
 Client: MRP

General Information	Weather Data				
Observers: L. Simpson J. Aguirre G. Hampton A. Schroeder		AM	1000	PM	1945
	Time (24 hr)	Start: <u>0545</u>	End: <u>0757</u>	Start: <u>1804</u>	End: <u>1945</u>
	Temp* (°F) <small>* above ground in shade</small>	Start: <u>60</u>	End: <u>85</u>	Start: <u>86</u>	End: <u>80</u>
	Wind (mph)	Start: <u>0-3</u>	End: <u>0-6</u>	Start: <u>3-7</u>	End: <u>1-3</u>
	% Cloud Cover	Start: <u>5</u>	End: <u>10</u>	Start: <u>0</u>	End: <u>0</u>

Site Information

Project Name: High Desert Solar

Location: Victorville Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Gen-tile + NW corner

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

See other datasheet for plant + wildlife information

Comments

Date: 6/5/18
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: Ipads



2017-062.003/002/21
 Project #:
 Client: MRP

General Information	Weather Data				
		AM		PM	
Observers: <u>Greg Hampton</u> <u>Lauren Simpson</u> <u>Jenny Aguirre</u> <u>Adam Schroeder</u>	Time (24 hr)	Start: <u>0545</u>	End: <u>1000</u>	Start: <u>0600</u>	End: <u>0745</u>
	Temp* (°F) <small>8" above ground in shade</small>	Start: <u>60^{oF}</u>	End: <u>85^{oF}</u>	Start: <u>86^{oF}</u>	End: <u>80^{oF}</u>
	Wind (mph)	Start: <u>0-3</u>	End: <u>0-5</u>	Start: <u>3-7</u>	End: <u>0-3</u>
	% Cloud Cover	Start: <u>5%</u>	End: <u>10%</u>	Start: <u>10%</u>	End: <u>0</u>

Site Information

Project Name: High Desert Solar

Location: Victorville Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Gentle + NW portion

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants
lar tri, Atr can, Stipau, Ste pau, Cyl ech, Opu bas

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]
BNST, RWBL, HOLA, CORA, LENI, AMKE, GRRO, MALL, GTGR
CAQU, MODO, WTSW, KILL, ATFL
 - Zebra tail lizard - side-blotch lizard
 - Whip tail lizard - antelope ground squirrel
 - Black-tailed jackrabbit

Comments

Date: 6/6/18
 Survey Season: Breeding
 Survey #: 3
 GPS File Name: Ipads



2017-062.003/21
 Project #:
 Client:
 Middle River Power

General Information	Weather Data				
		AM		PM	
Observers: Greg Hampton Lauren Simpson Jerry Aguirre Adam Schroeder	Time (24 hr)	Start: <u>0600</u>	End: <u>0945</u>	Start: _____	End: _____
	Temp* (°F) <small>6" above ground in shade</small>	Start: <u>59°F</u>	End: <u>79°F</u>	Start: _____	End: <u>N/A</u>
	Wind (mph)	Start: <u>0-3</u>	End: <u>1-5</u>	Start: _____	End: _____
	% Cloud Cover	Start: <u>0</u>	End: <u>1</u>	Start: _____	End: _____

Site Information

Project Name: High Desert Solar

Location: Victorville Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: NW portion + Gen-tic line

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants Amb dum, Lar foi, Yuc bre, Amb sal

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

HOLA, MODO, KILL, CORA

- Whiptail lizard

Comments

Date: 6/20/18
 Survey Season: Breeding
 Survey #: 4
 GPS File Name: Collector App.

Burrowing Owl Survey



Project #: 2017-06203
 Client: middle river solar

General Information	Weather Data				
		AM		PM	
Observers: LS CL JA TD	Time (24 hr)	Start: <u>0545</u>	End: <u>1000</u>	Start: <u>0615</u>	End: <u>2000</u>
	Temp* (°F) <small>* above ground in shade</small>	Start: <u>67</u>	End: <u>88</u>	Start: <u>97</u>	End: <u>87</u>
	Wind (mph)	Start: <u>0-2</u>	End: <u>1-4</u>	Start: <u>2-7</u>	End: <u>1-5</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>0</u>	End: <u>0</u>

Site Information

Project Name: High Desert Solar
 Location: Adelanto, CA
 County: San Bernardino
 Area Surveyed: Main Solar Portion

Photos Taken? [Y] [N]

Physical Characteristics

Elevation: _____ Soils: _____
 Land Form*: _____ Other: _____
* e.g. mesa, bajada, wash

Land Uses:
 N: _____ S: _____
 E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities: CBS
 Plants

Animals: [Include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Common raven
 Say's Phoebe
 Horned lark
 Black-throated sparrow
 cactus wren
 Loggerhead shrike (34.63040544, -117.37288747)

lesser nighthawk
 Great Basin whiptail
 western-side-blotched lizard
 black-tailed jackrabbit
 mourning dove

Comments

Date: 6/27/18
 Survey Season: Breeding
 Survey #: 4
 GPS File Name: Ipaw-Collector

Burrowing Owl Survey



Project #: 2017-062-028
 Client: MWD

General Information	Weather Data				
		AM		PM	
Observers: <u>LS, CL, JA, TD</u>	Time (24 hr)	Start: <u>0550</u>	End: <u>1000</u>	Start: <u>1800</u>	End: <u>1945</u>
	Temp* (°F) <small>* above ground in shade</small>	Start: <u>67</u>	End: <u>95</u>	Start: <u>95</u>	End: <u>86</u>
	Wind (mph)	Start: <u>2-5</u>	End: <u>1-6</u>	Start: <u>5-10</u>	End: <u>4-9</u>
	% Cloud Cover	Start: <u>0</u>	End: <u>0</u>	Start: <u>0</u>	End: <u>0</u>

Site Information

Project Name: High Desert Solar

Location: Adelanto Photos Taken? [Y] [N]

County: San Bernardino

Area Surveyed: Gen-Tie

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities: CRS

Plants

Animals: [Include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

CORA, WFIB, MODO, KILL, zebra-tailed lizard, white-tailed antelope
CA Ground squirrel, BLPH, ATFL, COYE, HOLA, SAPH, BTSP, Black-tailed
Jackrabbit

Comments

Date: 6/28/18

Survey Season: Breeding

Survey #: 4

GPS File Name: iPad-collector

Burrowing Owl Survey



Project #: 2017-062.083

Client: MFP

General Information		Weather Data			
Observers: CL, LS, JA, TD		AM		PM	
Time (24 hr)		Start: 0545	End: 0945	Start: _____	End: _____
Temp* (°F) <small>6" above ground in shade</small>		Start: 67	End: 95	Start: _____	End: _____
Wind (mph)		Start: 0-2	End: 0-3	Start: _____	End: _____
% Cloud Cover		Start: 1	End: 1	Start: _____	End: _____

Site Information

Project Name: High Desert Solar

Location: Adelanto

County: San Bernardino

Photos Taken? [Y] [N]

Area Surveyed: Bertie, NW solar section

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [Include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Desert kit fox, COBA, ATFL, HOLA, AMKE, BTSP, side-blotched lizard, white-tailed antelope ground squirrel, whiptail, black-tailed jackrabbit, (HCR)

Comments

Date: 10/9/18
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

General Information		Weather Data			
Observers: <u>Greg Hampton</u> <u>Laura Simpson</u> <u>Phil Wartz</u> <u>Torrey Robinson</u>		Time (24 hr) Temp* (°F) <small>0' above ground in shade</small> Wind (mph) % Cloud Cover	AM Start: <u>7:18</u> End: <u>3:50 pm</u>	PM Start: _____ End: _____	Start: _____ End: _____
			Start: <u>470</u> End: <u>76</u>	Start: _____ End: _____	Start: _____ End: _____
			Start: <u>3-5</u> End: <u>7-10</u>	Start: _____ End: _____	Start: _____ End: _____
			Start: <u>0%</u> End: <u>0%</u>	Start: _____ End: _____	Start: _____ End: _____

Site Information

Project Name: High Desert Solar

Location: Adelanto Photos Taken? [Y] [N]

County: SB

Area Surveyed:

Physical Characteristics

Elevation: _____ Soils: _____

Land Form*: _____ Other: _____

* e.g. mesa, bajada, wash

Land Uses:

N: _____ S: _____

E: _____ W: _____

Disturbances on Site: [e.g. tracks (vehicle, human, livestock); trash; dump sites; blading; other]

Transect Width: 40 meters

Field Observations

Vegetation Communities:

Plants

Animals: [include: B - burrow, S - scat, O - observed, T - tracks, C - carcass, or Other (specify)]

Black tailed J-Rabbit Bush Desert Tortoise

WCSP Horned Lizard BWOW

CORA HOLA ~~TR~~ ~~TR~~ TRES

~~W~~ BARS whiptail white-tailed antelope ground squirrel

JAPh

Comments

Date: 10/9/13
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

Burrowing Owl Sign			
Sign	# features	Location (UTM Northing/Easting)	Comments (aspect, dimensions, etc.)
Potential Burrow	1	34.62380892, -117.36444522	DT , NO sign, entrance to wash, SW facing, BOW 4x6 ft
DT - Burrow	2	34.61859714, -117.36495207	Class 1, scat , facing SE DT, 2 entrances (18x12), 1 burrow > 3ft in, recent scat in both, recent scat outside / passing out scat into area
Bow	1	1	occupied burrow w/ sign, whitewash present BOW
DT Burrow	1	34.6191, -117.3650	Class 2. no sign. 4x6. E aspect
DT Burrow	2	34.6191, -117.3651	Class 5, S aspect, 6x6 & (14x24), no DT sign, whitewash entrances in
Bow	1	1	occupied BOW burrows, whitewash & feathers present pellets
Comments:			

pg 2

Date: 1/9/18
 Survey Season: Breeding
 Survey #:
 GPS File Name: _____

Burrowing Owl Survey



Project #:
 Client:

Burrowing Owl Sign			
Sign	# features	Location (UTM Northing/Easting)	Comments (aspect, dimensions, etc.)
DT Burrow	1	34.61877412, -117.36561419	Class 3, No sign, Deteriorated, NE aspect, 9x4x<12, occupied Burrow w/ sign whitewash & pellets
Burrow	1	11	
Potential DT Burrow	1	34.61876687 -117.36569161	No sign, 6x6, NW aspect
DT Burrow	3	34.61931551 -117.36457396	Class 3, No sign, N aspect, on slope, various sizes & states of deterioration
DT Burrow	2	34.61949702, -117.3644425 -117.36442560	Class 1, scat, S aspect various sizes, both left wide
Burrow	1	11	2, occupied w/ sign, old whitewash
Owl	1	34.6196 -117.3659	Owl, No burrow, Flushed from under mesquite bush, Adult
DT	1	34.6201 -117.3667	Live tortoise in previously recorded burrow. Female Adult Female at mouth of Burrow 13" length, 9" wide
Comments:			5" tall / 330mm length

Appendix G. Burrowing Owl Survey Weather Conditions

BUOW Survey #	DT Survey	Date	Surveyors	Time		Temperature (°F)		Wind (mph)	
				start	end	start	end	start	end
1	X	4/6/2017	JA, JR, KC, WT	0615	1400	51	77	0	5-7
1	X	4/7/2017	JA, JR, KC, WT	0637	1310	55	71	0	12-15
1	X	4/10/2017	JR, KC, LS, PW	0611	1240	38	63	0-1	0-3
1	X	4/11/2017	JR, LS, PW, WT	0630	1235	43	70	0-1	0
1	X	4/12/2017	JR, LS, PW, WT	0613	1240	48	73	0-1	4-7
2		4/27/2017	JA, JR, LS, WT	0600	1000	54	64	12-15	10-12
				1720	1930	68	65	8-12	4-8
2		4/28/2017	JA, JR, LS, WT	0600	1005	53	64	1-4	1-3
2		5/1/2017	AS, BZ, JR, WT	0600	1025	50	76	0-1	0
				1752	1900	87	85	1-5	1-3
2	X	5/2/2017	AS, BZ, JR, WT	0600	1221	53	84	0-1	0-3
2	X	5/3/2017	JR, WT	0600	1200	57	83	0-3	2-5
3		5/31/2017	AS, JA, JR, WT	0600	1000	57	75	0	3-5
				1800	1945	76	73	3-5	0-3
3		6/1/2017	AS, JA, JR, WT	0600	1015	53	71	0	0-1
				1756	1949	84	78	0-1	7-10
3		6/2/2017	AS, JA, JR, WT	0550	0940	57	77	0	0
3		6/5/2017	JR, WT	0545	0945	62	82	0	1-3
				1745	1925	91	85	8-12	3-5
3		6/6/2017	JR, WT	0545	1045	59	89	2-4	0-1
4		6/26/2017	JR, LS, TD	0525	0940	65	92	0	1-5
				1750	1930	97	90	8-12	3-12
4		6/27/2017	JR, LS, TD	0530	0955	67	90	1-3	1-7
				1830	1955	95	85	1-7	1-5
4		6/28/2017	JR, LS, TD	0545	0945	67	84	0-1	3-8
				1830	1955	91	83	3-8	1-5
4		6/29/2017	JR, LS, TD	0555	0945	64	80	0-2	1-5
				1800	1900	95	90	5-10	3-7
4		6/30/2017	JR, LS, TD	0555	1030	63	91	0-2	0-2
1		4/9/2018	JA, JR, RV, TD	0715	1010	50	68	0-1	0-1
				1715	1900	83	79	1-3	0-1
1		4/10/2018	JA, JR, RV, TD	0630	1000	50	70	1-3	1-3
				1705	1900	82	72	10-12	6-8
1		4/11/2018	JA, JR, RV, TD	0715	1000	59	73	0-1	0-2
				1615	1915	76	76	10-12	5-7
1		4/12/2018	JA, JR	0615	1015	48	49	5-7	12

BUOW Survey #	DT Survey	Date	Surveyors	Time		Temperature (°F)		Wind (mph)	
				start	end	start	end	start	end
2	X	5/14/2018	AS, JR, LS, TD	0610	1330	50	76	0-2	0-2
2	X	5/15/2018	AS, JR, LS, TD	0625	1320	52	78	0-1	0-2
2	X	5/16/2018	AS, JR, LS, TD	0625	1330	50	78	0-1	2-4
2	X	5/17/2018	AS, JA, JR, TD	0625	1200	50	72	0-1	1-3
3		6/4/2018	AS, GH, JA, LS	0536	1009	65	89	0	0-5
				1815	2015	89	82	2-8	1-5
3		6/5/2018	AS, GH, JA, LS	0545	1000	60	85	0-3	0-5
				1800	1945	86	80	3-7	1-3
3		6/6/2018	AS, GH, JA, LS	0600	0945	59	79	0-3	1-5
4		6/26/18	CL, JA, LS, TD	0545	1000	67	88	0-2	1-4
				1815	2000	97	87	2-7	1-5
4		6/27/18	CL, JA, LS, TD	0550	1000	67	95	2-5	1-6
				1800	1945	95	86	5-10	4-9
4		6/28/18	CL, JA, LS, TD	0545	0945	67	95	0-2	0-3
5	X	10/9/2018	PW, LS, GH, TR	0718	1550	47	76	3-5	7-10

BUOW=Burrowing Owl; DT=Desert Tortoise

AS=Adam Schroeder, BZ=Brian Zitt, CL=Carley Lancaster, GH=Greg Hampton, JA=Jerry Aguirre, JR=Jon Renard, KC=Kevin Cornell, LS=Lauren (Dorough) Simpson, PW=Phil Wasz, TD=Taylor Dee, Torrey Rotellini=TR, WT=Wendy Turner

Incidental Special-Status Species and Nesting Bird Observations

Species	Observation Type	Date Observed	11N UTM		Other Notes
			Easting	Northing	
Black-throated sparrow (<i>Amphispiza bilineata</i>)	nest	5/2/2017	467119	3829339	Adult feeding chicks at nest in pencil cholla.
Swainson's hawk (<i>Buteo swainsoni</i>)	individual	5/14/2018	465162	3832467	Individual observed flying high above the survey area.
Cactus wren (<i>Campylorhynchus brunneicapillus</i>)	nest	4/7/2017	465606	3833038	Adult incubating in nest located within cholla.
Common raven (<i>Corvus corax</i>)	nest	4/6/2017	465615	3833875	Nest building in a Joshua tree.
	nest	4/10/2017	465771	3832868	Nest in Joshua tree.
	nest	4/11/2017	465796	3831911	Nest in Joshua tree.
	nest	4/10/2018	465796	3831911	Nest in Joshua tree, same nest location as in 2017.
Lark sparrow (<i>Chondestes grammacus</i>)	nest	5/2/2017	466924	3829031	Adult flushed from nest with three eggs.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	individual	6/26/2017	466091	3833873	One adult perched in creosote bush scrub.
	individual	4/28/2017	465448	3833118	One fledgling perched in creosote shrub.
	individual	6/2/2017	465529	3832970	One individual heard calling in creosote bush scrub.
	individual	4/12/2018	466726	3830344	One individual observed perched on a creosote bush.
	individual	5/14/2018	465067	3832875	One individual observed flying through survey area.
	individual	6/26/2018	465822	3832120	One individual observed perched on a Joshua tree.
Mourning dove (<i>Zenaida macroura</i>)	nest	6/30/2017	467106	3828839	Flushed from ground nest under shrub. Two eggs present.
Northern harrier (<i>Circus cyaneus</i>)	individual	5/1/2017	N/A	N/A	One adult foraging.
Peregrine falcon (<i>Falco peregrinus</i>)	individual	4/12/2017	466563	3830342	Perched on telephone pole.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	individual	4/11/2017	466602	3832571	Flying over Project site.

APPENDIX I

Incidental Desert Kit Fox Observations

Observation Type	Date Observed	11N UTM		Other Notes
		Easting	Northing	
Den complex with scat	4/7/2017	466227	3832943	Creosote bush scrub
Den with scat	4/7/2017	466212	3832936	Creosote bush scrub, large front opening, facing southeast
Den complex with scat	4/10/2017	465683	3832694	Creosote bush scrub, 2 aspects, old scat present
Den complex	4/11/2017	466829	3831860	Creosote bush scrub, 4 aspects, old scat present
Den with scat	4/11/2017	465498	3832827	Creosote bush scrub, fresh and old scat present
Den with scat and prey remains	4/11/2017	466738	3831689	Creosote bush scrub
Potential den	4/11/2017	465195	3833010	under fallen Joshua tree, 2 aspects, also recorded as potential burrowing owl burrow
Potential den	4/11/2017	466877	3831860	Creosote bush scrub, 2 aspects
Potential den	4/12/2017	466619	3839919	Creosote bush scrub, also recorded as potential burrowing owl burrow
Den with scat	4/12/2017	466864	3831183	Creosote bush scrub, coyote-size burrow, facing north, previously unrecorded desert kit fox scat observed during 2018 surveys.
Den complex with scat	4/27/2017	466488	3833804	Creosote bush scrub, 3 aspects
Den with scat	4/27/2017	466325	3832936	Creosote bush scrub, facing east
Den with scat	4/27/2017	466407	3833721	Creosote bush scrub, facing east
Den complex with scat	4/28/2017	465353	3832999	Creosote bush scrub, multiple aspects
Den with scat	4/28/2017	465337	3833144	Creosote bush scrub
Den complex with scat	5/2/2017	467014	3829215	On hill in creosote bush scrub, 2 aspects, facing south
Den complex with scat	5/31/2017	466660	3833505	Creosote bush scrub, 2 aspects, facing southeast
Den complex with scat and tracks	6/1/2017	465997	3832945	Under creosote bush and slab, 9 aspects
Den complex with scat	6/6/2017	466728	3828457	On edge of disturbed basin
Den with scat, urine, and fresh tracks	6/26/2017	466657	3833508	Creosote bush scrub
Den complex with scat and tracks	6/27/2017	466100	3832937	Under concrete foundation
Den with scat	6/29/2017	466960	3828257	Creosote bush scrub. Previously recorded as potential burrowing owl burrow.
Den with 5 pups	6/30/2017	466796	3827793	In culvert pipe 1,070 feet south of southern terminus of the gen-tie line