# PALMDALE HYBRID POWER PROJECT

***FINAL***

## BIOLOGICAL RESOURCES TECHNICAL REPORT
## LOS ANGELES COUNTY, CALIFORNIA

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AFC | Application for Certification |
| AMEC | AMEC Earth & Environmental, Inc. |
| AMSL | above mean sea level |
| APLIC | Avian Power Line Interaction Committee |
| Applicant | City of Palmdale |
| AVIRWMP | Antelope Valley Integrated Regional Water Management Plan |
| BCC | Bird of Conservation Concern |
| BLM | Bureau of Land Management |
| BRTR | Biological Resources Technical Report |
| CDFG | California Department of Fish and Game |
| CDNPA | California Desert Native Plant Act |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CESA | California Endangered Species Act |
| City | City of Palmdale |
| CNDDB | California Natural Diversity Data Base |
| CNPS | California Native Plant Society |
| County | County of Los Angeles |
| CSC | California species of special concern |
| CTG | combustion turbine generators |
| CWA | Clean Water Act |
| Developer | Inland Energy, Inc. |
| EAFB | Edwards Air Force Base |
| ENSR | ENSR Corporation |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| ETA | Ecological Transition Area |
| FCR | Field Contact Representative |
| GIS | Geographic Information System |
| GPS | Global Positioning Systems |
| HRSG | heat recovery steam generators |
| kV | kilovolt |
| LA | Los Angeles |
| LORS | laws, ordinances, regulations, and standards |
| MBTA | Migratory Bird Treaty Act |
| MGS | Mojave ground squirrel |
| MMRP | Mitigation and Monitoring Program |
| MW | megawatt |
| NOAA | National Oceanic and Atmospheric Association |
| NWP | nationwide permits |
| Owner | City of Palmdale |
| PHPP or Project | Palmdale Hybrid Power Project |

| | |
|---|---|
| PWRP | City of Palmdale Water Reclamation Plant |
| RCRA | Resource Conservation and Recovery Act |
| ROW | right-of-way |
| RWQCB | Regional Water Quality Control Board |
| SCE | Southern California Edison |
| SCG | Southern California Gas Company |
| SEA | Significant Ecological Areas |
| SEA-CUP | Conditional Use Permit for SEA |
| SEATAC | Significant Ecological Area Technical Advisory Committee |
| STG | steam turbine generator |
| T-Line | transmission line |
| TRS | Township Range Section |
| UCR | University of California at Riverside |
| USACE | U.S. Army Corps of Engineers |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| WEAP | Worker's Environmental Awareness Program |
| WSC | Waters of the State of California |
| WUS | Waters of the U.S. |
| ZLD | zero liquid discharge |
| ZOI | Zone of Influence |

## EXECUTIVE SUMMARY

AMEC Earth & Environmental, Inc. (AMEC) conducted an assessment of the biological resources with the potential to occur on and in the vicinity of the proposed Palmdale Hybrid Power Project (PHPP or Project) to identify special-status flora and fauna that may be impacted by Project implementation. This study included: (1) general biological resource and habitat assessment; (2) focused survey for desert tortoise (*Gopherus agassizii*); (3) habitat assessment and focused survey for burrowing owl (*Athene cunicularia*); (4) focused survey for potentially occurring special-status plant species; (5) delineation of federal "Waters of the United States" and "State Waters;" and (6) habitat assessment of Mohave ground squirrel (*Spermophilus mohavensis*) (MGS).

The PHPP, which includes the power plant site, transmission line, reclaimed water pipeline, natural gas supply pipeline, and sanitary wastewater pipeline, is located in the City of Palmdale, Los Angeles County, and in unincorporated Los Angeles County, California. The Project consists of a proposed 377-acre power plant site, adjacent 50-acre construction laydown area, 35.6-mile transmission line, 7.4-mile reclaimed water pipeline, 8.7-mile natural gas supply pipeline, and 1-mile sanitary wastewater pipeline. The Project also includes a 1-mile potable water pipeline that will be installed along the same alignment as the last portion of the reclaimed water pipeline.

The proposed Project site is primarily located in natural, undisturbed open space largely vegetated with Mojave creosote bush scrub, Joshua tree woodland, desert saltbush scrub, and rabbitbrush scrub. Other habitat communities present within portions of the Project include Mojavean juniper scrub, Mojave riparian forest, and Mojave Desert wash scrub. Urban and disturbed/developed areas and agricultural lands are present as well.

A literature review of pertinent biological data bases and documents, and biologists with local expertise reported occurrences of 60 special-status biological resources in the vicinity of the Project. No designated critical habitat for any species is located within the proposed disturbance footprint of the Project. Designated critical habitat for the desert tortoise, a species listed as threatened under the federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA), is located approximately 16 miles northeast of the Project in the Fremont-Kramer Desert Wildlife Management Area.

The California Aqueduct and Palmdale Ditch, although most likely man-made ditches constructed to transfer water through upland areas, potentially transport relatively permanent flow of water between two or more Waters of the U.S. (WUS) that may have a link to interstate or foreign commerce. Therefore, the Aqueduct and Palmdale Ditch may be considered jurisdictional WUS by the U.S. Army Corps of Engineers (USACE). A total of 21 waters were determined to be potential Waters of the State of California (WSC) within the Project site, two of which would also most likely be considered WUS.

Six special-status species were observed during the general and focused biological field surveys. These included Cooper's hawk (*Accipiter cooperii*), burrowing owl (outside the transmission line segment 1, 500-foot buffer zone), ferruginous hawk (*Buteo regalis*), Vaux's

swift (*Chaetura vauxi*), loggerhead shrike (*Lanius ludovicianus*), and Le Conte's thrasher (*Toxostoma lecontei*). A variety of other resident and migratory bird species protected by the Migratory Bird Treaty Act (MBTA) were observed on the Project site. Joshua trees (*Yucca brevifolia*), California junipers (*Juniperus californica*), and two species of native cacti (golden cholla [*Cylindropuntia echinocarpa*] and beavertail cactus [*Opuntia basilaris*]), species protected by the California Desert Native Plant Act (CDNPA) and the City of Palmdale Native Desert Vegetation Ordinance, are present throughout the various components of the Project site. A variety of special-status plant and wildlife species also have the potential to occur within limited areas of the Project site. Impacts (if any) to these potentially-occurring special-status plant and wildlife species are not expected due to the highly fragmented and marginal quality habitat present.

The Project applicant (City of Palmdale) has assumed the presence of MGS, a state-listed threatened species under CESA, on the power plant site and along portions of the transmission line. Implementation of the proposed Project would result in the permanent loss of approximately 383.5 acres of potentially suitable MGS habitat.

Appropriate mitigation measures and habitat loss replacement (compensation) programs for impacts resulting from the proposed Project have been developed and will be implemented as part of the Project. Incidental take authorization under CESA will be required for the Project for any take of the state-listed MGS. Adherence to the expected CEC Conditions of Certification requiring the Project to satisfy CESA requirements would reduce anticipated biological resource impacts to this species.

## 1.0 INTRODUCTION

AMEC Earth & Environmental, Inc. (AMEC) was contracted by ENSR Corporation (ENSR) to prepare a Biological Resources Technical Report (BRTR) for the development of the proposed Palmdale Hybrid Power Project (PHPP or Project), a nominal 570-megawatt (MW) hybrid combined-cycle/solar thermal electrical generation facility. Located in the City of Palmdale and unincorporated areas of Los Angeles County, California (the power plant site and most linear facilities are within the City of Palmdale; portions of the transmission line route are within unincorporated areas), the Project includes a 377-acre power plant site, 50-acre construction laydown area, 35.6-mile transmission line, 7.4-mile reclaimed water pipeline, 8.7-mile natural gas supply pipeline, and 1-mile sanitary wastewater pipeline (Figure 1). The Project also includes a 1-mile potable water pipeline that will be installed along the same alignment as the last portion of the reclaimed water pipeline; no separate discussion of biological issues associated with the potable water pipeline is provided. Throughout this report, the term “Project site” refers to all Project elements in the aggregate (power plant site and all linear facilities); “linear facilities” refers to the various Project pipelines and the transmission line in the aggregate; all other references are to the specific Project component being addressed (“power plant site” or “plant site,” “transmission line,” “reclaimed water pipeline,” “natural gas supply pipeline,” and “sanitary wastewater pipeline”).

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 (2008); (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 Endangered Species Acts (CESA and ESA, respectively) and CEC power plant siting regulations for biological resources.

This BRTR is an appendix to the PHPP Application for Certification (AFC) submitted to the CEC. It includes: (1) general biological resource and habitat assessment, (2) focused survey for desert tortoise (*Gopherus agassizii*), (3) habitat assessment and focused survey for burrowing owl (*Athene cunicularia*), (4) focused survey for potentially occurring special-status plant species, (5) delineation of federal “Waters of the United States” and “State Waters,” and (6) habitat assessment of Mohave ground squirrel (*Spermophilus mohavensis*) (MGS). A literature review and general survey were conducted to determine the biological resources with the potential to occur on or 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 sites 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, ESA, CESA, and local jurisdictional policies.

Information provided in this BRTR is intended to assist 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), U.S. Environmental Protection Agency (EPA), County of Los Angeles (County), City of Palmdale (City) (Owner and Applicant), and Inland Energy, Inc. (developer).

# 2.0 REGULATORY FRAMEWORK

The PHPP will comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) throughout Project construction and operation. Potentially applicable LORS are discussed in the following text.

## 2.1 Federal

### 2.1.1 Endangered Species Act (ESA) (16 USC §§1531 *et seq*.)

This 1973 law, administered by the USFWS, is designed to minimize impacts to imperiled plants and animals, as well as facilitate recovery of such species. Declining plant and animal species are listed as "endangered" or "threatened" based on a variety of factors. Applicants for projects requiring federal agency action that could adversely affect listed species are required to consult with and mitigate impacts in consultation with the USFWS. Adverse impacts are defined as "take" (defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct"), which is prohibited except as authorized through consultation under Section 7 or through issuance of an Incidental Take Permit under Section 10. The Ventura Field Office of the USFWS oversees permitting actions relative to the ESA in the Project vicinity.

### 2.1.2 The Migratory Bird Treaty Act (MBTA) (16 USC §§703-711)

This law prohibits actions resulting in the pursuit, capture, killing, and/or possession of any protected migratory bird, nest, egg or parts thereof. The USFWS maintains a list of designated migratory birds occurring in various regions of the United States. The agency also administers a permitting mechanism allowing for their incidental take where unavoidable impacts to nesting birds arise. The Ventura Field Office of the USFWS oversees actions relative to the MBTA in the Project vicinity.

### 2.1.3 The Bald and Golden Eagle Protection Act (16 USC §668)

This law specifically protects bald and golden eagles from harm and from trade in parts of these species.

### 2.1.4 Section 404 of the Clean Water Act (CWA) (33 USC §§1251 *et seq*.)

This section of the CWA (1977) is administered by the USACE and regulates placement of dredged and fill material into "Waters of the U.S." (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. Under this nationwide program, steps also must 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 are required. The USACE Los Angeles District Office oversees regulatory permitting for projects in the Project vicinity.

### 2.1.5 Section 401 of the Clean Water Act (33 USC §§1344 *et seq*.)

Section 401 requires that federal agencies issuing licenses or permits for construction (*e.g.* a Section 404 permit) obtain a written certification that the activity will not cause or contribute to a violation of a state's water quality standards. After receiving the certification, the federal agency issuing the permit must include conditions in the permit to prevent the project from degrading water quality of a downstream state or tribe. In California, such certifications are provided by the applicable Regional Water Quality Control Board (RWQCB). The Lahontan RWQCB oversees permitting actions in the Project vicinity.

## 2.2 State

### 2.2.1 Warren-Alquist Act

Power plant siting and certification in California are conducted pursuant to the Warren-Alquist Act. Public Resources Code Section 25500 states that the issuance of a certificate by the CEC shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.

### 2.2.2 California Environmental Quality Act (CEQA) (Public Resources Code §21000 *et seq*.)

CEQA requires identification of significant environmental effects of proposed projects (including impacts on biological resources), and avoidance (where feasible) or mitigation of the significant effects. CEQA applies to "projects" proposed to be undertaken or requiring approval by state and/or local governmental agencies. "Projects" are activities that have the potential to have a physical impact on the environment. The CEC licensing process under the Warren-Alquist Act is a CEQA-equivalent process.

### 2.2.3 California Endangered Species Act (CESA) (Fish and Game Code §§2050 *et seq*.)

This state law prohibits the "take" (defined as to hunt, pursue, catch, capture, or kill) of state-listed species except as otherwise provided in state law. CESA, administered by CDFG, is similar to the federal ESA, although unlike the federal law, CESA applies incidental take prohibitions to species currently petitioned for state-listing status (*i.e.* candidate species). State lead agencies are required to consult with the CDFG to ensure that their authorized actions are not likely to jeopardize the continued existence of any state-listed species or result in the degradation of occupied habitat. Under Section 2081, CDFG authorizes "take" of state-listed endangered, threatened, or candidate species through incidental take permits or memoranda of understanding. 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. Should a species be both federally and state-listed, and if the federal ESA authorization fulfills CESA requirements, CDFG may streamline the CESA permitting process by adopting a "Consistency Determination" (Section 2081.1), that concurs with the federal authorization.

Under the Warren-Alquist Act, the CEC issues CESA incidental take authorizations as part of its power plant licensing process, with the concurrence of CDFG.

### 2.2.4 Fish and Game Codes §§3503, 3503.5, and 3511

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Code or any associated regulation. Section 3503.5 makes it unlawful to take, possess, or destroy birds of prey. It also prohibits the take, possession, or destruction of nests or eggs of any bird of prey. Section 3511 describes bird species, primarily raptors that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements. No incidental take permit may be issued for a fully protected species.

### 2.2.5 Fish and Game Codes §§4700, 5050, and 5515

These sections list mammal, amphibian, reptile, and fish species that are classified as fully protected in California.

### 2.2.6 Native Plant Protection Act (NPPA), Fish and Game Code §§1900 *et seq.*

The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species.

### 2.2.7 California Desert Native Plant Act (CDNPA), Fish and Game Code §§1925-1926

The CDNPA was passed in 1981 to protect non-listed California desert native plants from unlawful harvesting on both public and privately owned lands. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit, or wood receipt, and the required tags and seals.

### 2.2.8 Title 14, California Code of Regulations §§670.2 and 670.5

These sections list plant and animal species designated as threatened and endangered in California. California species of special concern (CSC) is a category applied by the CDFG to those species that are indicators of regional habitat changes or are considered potential future protected species. CSCs do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

#### 2.2.9 California Fish and Game Code §§1600-1607

Pursuant to these sections, CDFG regulates 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, and that supports fish or other aquatic biota. Such areas are formally referred to as WSC. Impacts to vegetation and wildlife from sediment, diversions, and other disturbances are included in the review.

### 2.3 Local

#### 2.3.1 Los Angeles County General Plan

The Biological Resources section of the Los Angeles County Draft Preliminary Plan (2007) identifies the valuable biological resources within Los Angeles County (County) and establishes the goals and policy direction to utilize and conserve these resources for existing and future generations.

##### 2.3.1.1 Significant Ecological Areas

The primary mechanism used by the County to conserve biological diversity is a zoning designation called Significant Ecological Areas (SEA). The transmission line will span the Little Rock Wash SEA twice, once along segment 1 and once along segment 2. SEAs are ecologically important land and water systems that are valuable as plant or animal communities, often important to the preservation of threatened or endangered species, and conservation of biological diversity in the County. Ecological Transition Areas (ETAs), a subset of significant ecological areas, are areas where the natural ecological systems have been degraded as a result of past or on-going land use activities, but are functionally integral to the SEA by virtue of their location. SEAs are not preserves, but instead, are areas where the County deems it important to facilitate a balance between new development and resource conservation.

Projects in a SEA, unless exempt, will be subject to one of two regulatory processes depending on the type of project being proposed: (1) Minor Conditional Use Permit for SEA (Minor SEA-CUP) without review by the Significant Ecological Area Technical Advisory Committee (SEATAC); or (2) Conditional Use Permit for SEA (SEA-CUP) with SEATAC review. Large projects in a SEA, particularly land divisions, will require a SEA-CUP with an accompanying public hearing process that provides for an additional level of environmental review to help ensure that the proposal complies with the County's natural resource protection measures. Through the CUP, the County will set limitations and conditions on the project to ensure consistency with the General Plan and allow the public, who may potentially be affected by the project, an opportunity to comment during the hearing process.

### 2.3.2 City of Palmdale General Plan

The City of Palmdale General Plan (1993) sets forth goals to preserve and protect biological resources, including: (1) preserve significant natural and man-made open space areas; (2) protect significant ecological resources and ecosystems, including, but not limited to, sensitive flora and fauna habitat areas; (3) preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley; (4) protect the quality and quantity of local water resources; and (5) promote the attainment of state and federal air quality standards.

The City will require biological assessments and reports for projects in known or suspected natural habitat areas prior to project approval. These reports will be used to establish significant natural habitat areas and ecologically sensitive zones to prevent disturbance and degradation of these areas. Recommended mitigation measures as identified in the reports will be required to be implemented as development occurs.

#### 2.3.2.1 City of Palmdale Native Desert Vegetation Ordinance

The City has adopted Ordinance No. 952, referred to as the Native Desert Vegetation Ordinance. This ordinance is designed to preserve a number of specimen-quality juniper (*Juniperus californica*) and Joshua trees (*Yucca brevifolia*) that add to community identity, and to encourage the use of native vegetation in new development landscaping. All landscaping for new developments must conform to the requirements set forth in the Native Desert Vegetation Ordinance. In keeping with the intent of this Ordinance, the City may require preservation of significant stands through use of the Specific Plan process or equivalent planning process, and through design review processes on individual projects.

**Comment [S1]:** The Department considers Joshua tree woodlands as a threatened vegetative community. The loss of Joshua tree woodland as the result of the proposed project should be recognized by the lead agency as a local/regional significant impact under CEQA unless mitigated below a significant level.

Native Vegetation Preservation Plans approved by the City of Palmdale do little to avoid and/or mitigate for the continual cumulative loss of functional Joshua tree woodland communities and have not been scientifically evaluated to justify continual reliance as a mitigation measure. Saving two trees per acre on site and/or Digging up Joshua trees and transplanting into isolated and urbanized landscaping areas as endorsed by the City of Palmdale should not be considered appropriate mitigation of loss of Joshua tree woodland vegetative communities as these methods are experimental and there are no assurances of their success.

Joshua tree woodland on the project site should be avoided and preserved in perpetuity from further development. If avoidance of functional Joshua tree woodland is not feasible, off site Joshua tree woodland of equal or superior quality should be acquired at a no less than a 1:1 mitigation ratio within remaining Joshua tree woodland in the Antelope Valley to avoid local extirpation. Acquired habitat should be adjacent to large tracts of existing Joshua tree woodlands which have been identified by resource agencies as having a high priority for acquisition for conservation. All mitigation lands preserved on site or acquired off site should be deeded to a local land conservancy and protected in perpetuity under a conservation easement to prohibit incompatible uses on the site. Digging up Joshua trees and transplanting into other areas as endorsed by the City of Palmdale should not be considered appropriate mitigation of loss of Joshua tree woodland vegetative communities as these methods are experimental and there are no assurances of their success.

Joshua tree woodlands should be avoided and preserved. If avoidance is not feasible efforts should be made to acquire and protect habitat of equal or superior value and/ or acquire and project areas to be restored and/or created which will result in fully functional Joshua tree woodland habitat. Salvaged Joshua trees should be transplanted into preserve areas as described above where restoration/creation and monitoring may occur. Fees assessed by the City on development projects which ... [1]

# 3.0 PROJECT LOCATION AND DESCRIPTION

## 3.1 Project Location

The City of Palmdale (City) is located in the High Desert region of Los Angeles County, approximately 60 freeway miles north of downtown Los Angeles (Figure 1). It is separated from Los Angeles by the San Gabriel Mountain range. Palmdale is one of two incorporated cities and several unincorporated communities within the Antelope Valley. The City is bordered by the City of Lancaster and the unincorporated community of Quartz Hill to the north; the unincorporated communities of Lake Los Angeles and Littlerock to the east; the unincorporated community of Acton to the south; and the unincorporated community of Leona Valley to the west. The City of Palmdale Planning Area encompasses approximately 174 square miles within a transitional area between the foothills of the San Gabriel and Sierra Pelona Mountains and the Mojave Desert to the north and east (City of Palmdale 1993).

In general, the Planning Area slopes from south to north-northeast, with surface and subsurface flows trending away from the foothills to Rosamond Dry Lake. The major watercourses flowing through Palmdale are Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. While foothill areas within and adjacent to the City contain significant slopes, a majority of the Planning Area is relatively flat. The climate of Palmdale and the Antelope Valley is dominated by the region's Pacific high-pressure system, which contributes to the area's hot, dry summers and relatively mild winters (City of Palmdale 1993).

The native plants and wildlife of the Antelope Valley have adapted to the arid climate and quick-draining, sandy soils; however, the expanding human settlement of the region has upset this natural balance. Development has resulted in replacement of the existing desert species with landscaping materials not native to the region that require regular watering to survive. Development has also blocked access to and eliminated foraging and nesting areas, and introduced air and water pollution that can adversely affect habitat quality. Past development patterns have created habitat "islands," isolating populations of species, thereby reducing their local long-term viability (City of Palmdale 1993).

The Project consists of five components (with quadrangle and Township Range Section (TRS) data below):

1. Power Plant Site and Construction Laydown Area:
   - USGS 7.5' Quadrangle: Lancaster East
   - T6N, R12W, S 1-2
   - T7N, R12W, S 35-36

2. Transmission Line
   - USGS 7.5' Quadrangles: Lancaster East, Alpine Butte, Littlerock, Palmdale, Pacifico Mountain
   - T5N, R10W; R11W, S 19-24; R12W, S 23-24, 26-27;

- T6N, R10W, S 4-5, 8-9, 16-17, 20-22, 26-28, 34-35; R11W, S 6; R12W, S 1;
- T7N, R10W, S 29-33; R11W, S 25-29, 31-36; R12W, S 36

3. Reclaimed Water Line
   - USGS 7.5' Quadrangles: Lancaster West, Lancaster East, Palmdale
   - T6N, R11W, S 17-20; R12W, S 2, 11, 13-14, 24
   - T7N, R12W, S 35

4. Natural Gas Supply Pipeline
   - USGS 7.5' Quadrangles: Lancaster West, Lancaster East, Palmdale
   - T5N, R12W, S 2
   - T6N, R12W, S 2, 11, 13-14, 23-26, 35-36

5. Sanitary Wastewater Pipeline
   - USGS 7.5' Quadrangle: Lancaster East
   - T7N, R12W, S 36

## 3.2 Project Description

The City proposes to construct, own, and operate the Project. The Project will have a nominal electrical output of 570 MW, and commercial operation is planned for the summer of 2013. The solar thermal input will provide approximately 10 percent of the peak power generated by the plant during the most energy-demanding time of the day. The PHPP will be a zero liquid discharge (ZLD) design; no off-site industrial liquid waste discharge will occur. Brine (cooling water blowdown) from the Project will be processed to solid waste and disposed at an appropriately permitted off-site disposal facility. The Project is expected to supply power to the rapidly growing southern California market. The City has contracted with Inland Energy, Inc. to develop the Project.

### 3.2.1 Power Plant

The Project consists of a hybrid of natural gas-fired combined-cycle generating equipment integrated with solar thermal generating equipment to be developed on an approximately 377-acre site in the northern portions of the City. The combined-cycle equipment utilizes two natural gas-fired combustion turbine generators (CTG), two heat recovery steam generators (HRSG), and one steam turbine generator (STG). The solar thermal equipment utilizes arrays of parabolic collectors to heat a high-temperature working fluid. The hot working fluid is used to boil water to generate steam. The combined-cycle equipment is integrated thermally with the solar equipment at the HRSG and both utilize the single STG that is part of the Project. All of this 377-acre area would be subject to permanent impacts.

#### 3.2.1.1 Construction Laydown Area

**Comment [S2]:** Should be in an area already disturbed w.i. the main project footprint area

The construction laydown area would occupy a footprint of 50 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. All of this 50-acre area would be subject to permanent impacts.

### 3.2.2 Linear Facilities

The proposed Project would require the construction and installation of four required linear utility features. These include: (1) transmission line; (2) reclaimed water pipeline; (3) natural gas supply pipeline; and (4) sanitary wastewater pipeline. These linear features are described separately below.

#### 3.2.2.1 Transmission Line

The proposed interconnection point for the Project with the Southern California Edison (SCE) electrical transmission system is at SCE's existing Vincent Substation, approximately 11 miles south-southwest of the proposed power plant site. To accommodate the needs of Palmdale's aviation community (Air Force Plant 42 and Los Angeles (LA) World Airports), a circuitous transmission line route approximately 35.6 miles long is planned that extends north and east from the power plant site, then south and back to the west. The Project's transmission system will be constructed in two segments, as briefly summarized below.

Transmission line segment 1 involves the construction of approximately 23.7 miles of 230-kilovolt (kV) transmission line in new and existing right-of-ways (ROWs) between the power plant site and SCE's Pearblossom Substation. The route extends northward and eastward from the power plant site, then southward and finally back to the southwest. Transmission line segment 2 is a system reliability upgrade that includes increasing transmission capacity and expansion of the existing Vincent Substation. A new single-circuit 230 kV line will be installed on new 230 kV towers parallel to existing lines in an existing 11.9-mile transmission ROW extending westward from the Pearblossom Substation to the Vincent Substation.

Permanent disturbance areas for the transmission line include pole footprints, access roads, laydown areas, and other Project-related facilities.

#### 3.2.2.2 Reclaimed Water Pipeline

Reclaimed water for the Project cooling tower makeup and other industrial uses will be supplied from the City of Palmdale Water Reclamation Plant (PWRP). The City will design and construct an approximately 7.4-mile 14-inch pipeline from the PWRP to the power plant site in existing City street ROWs. No new disturbance is anticipated.

The Project's backup cooling water supply will also be reclaimed water. The Antelope Valley recently drafted an Integrated Regional Water Management Plan (AVIRWMP). The AVIRWMP shows a proposed reclaimed water backbone system, linking the City of Palmdale with the City of Lancaster, both of whose wastewater treatment plants will be producing reclaimed water. In the event of an outage in the Palmdale treatment plant's reclaimed water production system, the PHPP will utilize the regional backbone system to provide a source of reclaimed water to serve as a backup for the Project's cooling water supply.

#### 3.2.2.3 Natural Gas Supply Pipeline

The Project will be fueled with natural gas delivered via a new 20-inch natural gas pipeline. The Southern California Gas Company (SCG) will design and construct the approximately 8.7-mile pipeline in existing City street ROWs. The pipeline will originate at the SCG facility on East Avenue S and terminate at the power plant site. No new disturbance is anticipated.

#### 3.2.2.4 Sanitary Wastewater Pipeline

Sanitary wastewater will be disposed through an existing Los Angeles County Sanitation Districts 12-inch sanitary wastewater pipeline. The Project will connect to the existing line at an existing manhole just north of Avenue L along Challenger Way approximately 1 mile from the power plant site. The sanitary wastewater pipeline will be approximately 1 mile long and will be constructed in existing City street ROWs. No new disturbance is anticipated.

# 4.0 METHODS

## 4.1 Literature Review

A literature review was conducted to identify special-status biological resources known from the vicinity of the Project 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 review included:

- CDFG's California Natural Diversity Data Base (CNDDB) version 3.1.0 RAREFIND application (CDFG 2008). This review included all elements within the following USGS 7.5' Quadrangles: Lancaster West, Lancaster East, Alpine Butte, Hi Vista, Ritter Ridge, Palmdale, Littlerock, Lovejoy Buttes, Acton, Pacifico Mountain, Juniper Hills, and Valyermo.
- California Native Plant Society's (CNPS) *Rare and Endangered Vascular Plants of California* (2008).
- *Soil Survey of Los Angeles County, California, Antelope Valley Area, California* (USDA Soil Conservation Service 1986).
- Other biological surveys from the general vicinity (*i.e.* Eremico Biological Services [2006], CSU Stanislaus [2006]) and species accounts incorporated into the West Mojave Plan (BLM 2006).
- County and City General Plans.
- Pertinent documents from the AMEC library.

**Comment [S3]:** Should consult statewide burrowing owl survey results for this area and Los Angeles Co. Breeding Bird Atlas

## 4.2 Field Surveys

Field surveys included a general biological resource and habitat assessment and inventory in addition to focused surveys for special-status plant species, desert tortoise, burrowing owl, and MGS. **Surveys in 2008 for special-status plants, desert tortoise, and burrowing owl were conducted concurrently** and involved transects spaced no more than 30 feet apart covering 100 percent of all Project site areas involving proposed ground disturbance (power plant site, construction laydown area, and linear ROWs). Buffer zone transects were spaced 100 feet apart out to 500 feet from the edge of the Project site. Zone of Influence (ZOI) transects, where possible, around all of these areas were also performed at 100, 300, and 500 feet (these three ZOIs conducted concurrently with Buffer zone transects); 1,200-, 2,400-, 3,960- (power plant site only); and 5,280-foot (power plant site only) intervals, as required by the desert tortoise survey guidelines (USFWS 1992, CEC 2007). See Figure 2 for survey areas.

**Comment [S4]:** Were these focused surveys? Should not do plant surveys concurrently;. saves money but misses plants.

Field surveys were conducted April 1 to 26, 2008 by AMEC Biologists Matt Amalong, Nathan Moorhatch, and Heather Rothbard and biological sub-consultants Nathan Mudry, Steve Ferrand, Jim Boone, Alex Heindl, and Dennis Strong (see Attachment 1 for qualifications). Focused surveys for special-status plant species, desert tortoise, burrowing owl burrows, and jurisdictional waters were also conducted on the power plant site in 2006 by AMEC Biologists John Green, Dave Kajtaniak, and Daryl Trumbo and biological sub-consultant Ted Rado. All flora and fauna detected (*e.g.* through direct observation, vocalizations, presence of scat, tracks, and/or bones) were recorded.

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, Botanist and 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.

One segment of the transmission line route (along 105$^{th}$ Street from Avenue M-4 to Avenue P) was changed after field surveys were conducted; therefore, 3.75 miles of ROW were not surveyed. However, a cursory field survey identified the habitat communities along this revised route to be very similar to surveyed areas, so species composition is expected to be similar.

### 4.2.1 Biological Resource and Habitat Assessment

The general biological resource and habitat assessment and inventory, conducted concurrently with the focused surveys, involved walking transects of various widths over various areas of the site, buffer zone, and ZOI. A general habitat assessment, where possible, was also conducted at the 1-mile radius mark around the power plant site and 1,000 feet from linear facilities.

### 4.2.2 Jurisdictional Waters Preliminary Determination

The determination of status and extent of potential jurisdictional WUS and WSC in the Project area was based on assessments of available background information, discussions with regulatory community (Trinh 2008, Larkin 2008), and interpretation of aerial photography in reference to the proposed Project area. Information was obtained from topographic maps and aerial photographs (GlobeXplorer 2007). Project boundaries were plotted over high-resolution, true-color, georectified aerial photography. A 250-foot buffer was included around all project operations including either side of transmission and pipeline corridors. Boundaries of potential jurisdictional waters were estimated based on photo interpretation of defined channels and adjacent riparian vegetation communities, where applicable. The data were then exported to GIS and overlaid with delineated boundaries of WUS and WSC.

### 4.2.3 Special-Status Plants Focused Survey

Focused surveys for special-status plant species potentially occurring were conducted throughout the power plant site and linear ROWs (concurrently with the desert tortoise and burrowing owl surveys). Surveys adhered to CDFG (2000) and CNPS (2001) guidelines. The surveys included focused searches for San Gabriel manzanita (*Arctostaphylos gabrielensis*), San Antonio milkvetch (*Astragalus lentiginosus* var. *antonius*), Lancaster milkvetch (*Astragalus preussii* var. *laxiflorus*), alkali mariposa lily (*Calochortus striatus*), Peirson's morning-glory (*Calystegia peirsonii*), white pygmy-poppy (*Canbya candida*), brown fox sedge (*Carex vulpinoidea*), Mt. Gleason paintbrush (*Castilleja gleasonii*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), Kern Canyon clarkia (*Clarkia xantiana* ssp. *parviflora*), pale-yellow layia (*Layia heterotricha*), lemon lily (*Lilium parryi*), San Gabriel linanthus (*Linanthus concinnus*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), Peirson's lupine (*Lupinus peirsonii*), California muhly (*Muhlenbergia californica*), short-joint beavertail (*Opuntia basilaris* var. *brachyclada*), Rock Creek broomrape (*Orobanche valida* ssp. *valida*), Parish's popcornflower (*Plagiobothrys parishii*), Mason's neststraw (*Stylocline masonii*), and Greata's aster (*Symphyotrichum greatae*), 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 Project site. Surveys were conducted during appropriate flowering periods for the annual species; cacti were detectable during all field surveys.

Various segments of the transmission line, reclaimed water pipeline, and natural gas supply pipeline were not surveyed because of unsuitable habitat (*e.g.* developed, agricultural), inaccessible/fenced areas (*e.g.* Air Force Plant 42, LA World Airports), and/or precipitous terrain (*e.g.* mountainous portion of transmission line segment 2) (Figure 2).

### 4.2.4 Desert Tortoise Focused Survey

Focused surveys for desert tortoise were conducted throughout the power plant site, linear ROWs, and ZOIs (concurrently with the plant and burrowing owl surveys). Surveys adhered to USFWS (1992) survey protocols. Belt transects of 30 feet in width were walked throughout the aforementioned areas. A 10 percent Quality Survey (10-foot belt transects) was conducted on the power plant site. ZOI surveys were conducted in all directions around all areas of the power plant site (where possible) at transect intervals of 100, 300, 500, 1,200, 2,400, 3,960, and 5,280 feet. ZOI surveys were conducted on both sides of linear facilities (where possible) at transect intervals of 100, 300, 500, 1,200, and 2,400 feet. 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 (one Class 5 burrow) was photographed with a digital camera and mapped using handheld GPS equipment. Desert woodrat (*Neotoma lepida*) middens and animal burrows of various kinds (*e.g.* desert tortoise, kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and California ground squirrel (*Spermophilus beecheyi*), etc.) were carefully inspected for presence of desert tortoises and/or their sign.

Various segments of the transmission line, reclaimed water pipeline, and natural gas supply pipeline were not surveyed because of unsuitable habitat (*e.g.* developed, agricultural),

inaccessible/fenced areas (*e.g.* Air Force Plant 42, LA World Airports), and/or precipitous terrain (*e.g.* mountainous portion of transmission line segment 2) (Figure 2). Since desert tortoises have been documented living in mountainous areas, these precipitous areas (unable to be walked) were scanned using binoculars.

### 4.2.5 Burrowing Owl Survey

A burrowing owl habitat assessment and surveys for burrowing owl were conducted throughout the power plant site, linear ROWs, and 500' buffer zones (concurrently with the desert tortoise and plant surveys). Surveys adhered to California Burrowing Owl Consortium (1993) and CDFG (1995) protocols. Various segments of the transmission line, reclaimed water pipeline, and natural gas supply pipeline were not surveyed because of unsuitable habitat (*e.g.* developed, agricultural), inaccessible/fenced areas (*e.g.* Air Force Plant 42, LA World Airports), and/or precipitous terrain (*e.g.* mountainous portion of transmission line segment 2) (Figure 2).

#### 4.2.5.1 Burrowing Owl Habitat Assessment

The Project site and a 500-foot buffer (where possible and appropriate based on habitat) were surveyed to assess the presence or potential presence of burrowing owls and/or suitable habitat (conducted concurrently with desert tortoise and plant surveys). Pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 100 feet and was reduced to account for differences in terrain, vegetation density, and ground surface visibility.

#### 4.2.5.2 Focused Burrowing Owl Burrow Survey

A focused burrow survey to detect natural burrows or suitable man-made structures was conducted concurrently with the burrowing owl habitat assessment as well as the desert tortoise and plant surveys. Biologists walked areas of suitable habitat while searching for burrowing owls, potential and active burrows, and owl sign such as feathers, pellets, and prey items. The 500-foot buffer zone was surveyed to identify burrows and owls outside of the Project site boundaries which may be impacted by factors such as noise and vibration created by heavy equipment during project construction. Pedestrian survey transects were spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines was no more than 100 feet and was reduced to account for differences in terrain, vegetation density, and ground surface visibility. The location of all suitable burrowing owl habitat, potential owl burrows, burrowing owl sign, and any owls observed were recorded and mapped.

#### 4.2.5.3 Focused Burrowing Owl Survey

Focused burrowing owl nesting season surveys will be conducted on 4 separate days before August 15, 2008, throughout areas of suitable habitat (Figure 3). Surveys will be conducted either in the morning (1 hour before sunrise to 2 hours after sunrise) or late afternoon (2 hours before sunset to on1e hour after sunset). Binoculars will be used to scan all suitable habitat, locations of mapped burrows, and potential perch locations. Surveys will be conducted from fixed points and provided 100 percent visual coverage of the site. Surveys will be conducted during weather conducive to observing owls outside their burrows.

### 4.2.6 Mohave Ground Squirrel Habitat Assessment

Trapping surveys for MGS were conducted on the power plant site in 2006 by Eremico Biological Services and California State University, Stanislaus Endangered Species Recovery Program. A habitat assessment was conducted of the Project site by a well-known MGS expert, Dr. Phil Leitner, in July 2008. Detailed methods can be found in the respective reports in Attachment 2.

# 5.0 RESULTS

## 5.1 General Topography

The power plant site, transmission line segment 1, reclaimed water pipeline, natural gas supply pipeline, and sanitary sewer pipeline are primarily flat (approximately 2,500 to 3,000 feet above mean sea level [AMSL]). The transmission line segment 2 leaves the West Mojave Desert basin and enters the foothills of the San Gabriel Mountain range (approximately 3,000 to 4,200 feet AMSL). The overall highest elevation of all the site features combined is approximately 4,200 feet AMSL, located near the southwestern terminus of the transmission line before the tie-in to the Vincent Substation. The lowest elevation is approximately 2,490 feet AMSL, located at the northeast corner of the power plant site.

## 5.2 Soils

The *Soil Survey of Los Angeles County, California, Antelope Valley Area, California* (USDA Soil Conservation Service 1986) and the USDA Natural Resources Conservation Service Web Soil Survey were referenced to determine the soil types occurring throughout the Project site (Figure 4).

### 5.2.1 Power Plant

The following mapping units occur across the areas of the power plant site:

- Adelanto coarse sandy loam, 2 to 5 percent slopes.

The Adelanto series consists of very deep well-drained soils that formed in granitic parent material on alluvial fans and plains. Slopes range from 0 to 5 percent. Adelanto soils occur on nearly level to gently sloping alluvial fans and plains. The sediments are derived mostly from granite and closely related rocks. The climate is arid. Annual precipitation is about 4 to 9 inches. With irrigation, alfalfa is the main crop. Native vegetation is creosote bush (*Larrea tridentata*), a few annual grasses and forbs, a few perennial grasses, with Joshua and juniper trees on the more moist fringes (USDA 1986).

- Cajon loamy sand, 0 to 2 percent slopes
- Cajon loamy sand, 2 to 9 percent slopes
- Cajon loamy fine sand, 0 to 2 percent slopes, hummocky

The Cajon series consists of very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. Cajon soils are on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces. Slopes are 0 to 15 percent. The climate is arid with hot dry summers and somewhat moist winters. Average annual precipitation is 2 to 9 inches, mostly in the form of winter rain. This soil is used mostly for range, watershed, and recreation. A few areas are irrigated and are used for growing alfalfa and other crops. Vegetation is mostly desert shrubs including creosote bush, saltbush (*Atriplex* sp.), joint fir

(*Ephedra* sp.), Joshua trees, some Indian ricegrass (*Achnatherum hymenoides*), and annual grasses and forbs (USDA 1986).

### 5.2.2 Transmission Line

The following mapping units occur across the areas of the transmission line:

- Arizo gravelly loamy sand, 0 to 5 percent slopes
- Arizo loamy fine sand, 0 to 2 percent slopes

The Arizo series consists of very deep excessively drained soils that formed in mixed alluvium. Arizo soils are on recent alluvial fans, inset fans, fan apron, fan skirts, stream terraces, floodplains of intermittent streams, and channels. Slope ranges from 0 to 15 percent. The mean annual precipitation is about 7 inches. The climate is arid or semiarid with mild winters and hot dry summers. These soils are used for rangeland and wildlife habitat. The present vegetation is mainly creosote bush and white bursage (USDA 1986).

- Cajon loamy fine sand, 0 to 2 percent slopes, hummocky
- Cajon loamy sand, 0 to 2 percent slopes
- Cajon loamy sand, 2 to 9 percent slopes
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes
- Castaic Balcom silty clay loams, 30 to 50 percent slopes, eroded

The Castaic soils are well drained, moderately slowly permeable. They are strongly sloping to very steep. They formed in residuum weathered from shale, sandstone, and mudstone. Mean annual precipitation is 12 to 20 inches. These soils are used mostly for range. A few areas are used for growing grain and citrus fruits. Vegetation in uncultivated areas is mostly annual grasses and forbs, with scattered brush and a few live oak trees (USDA 1986).

- Dune land
- Gaviota rocky sandy loam, 30 to 50 percent slopes, eroded

The Gaviota series consists of very shallow or shallow, well-drained soils that formed in material weathered from hard sandstone or meta-sandstone. Gaviota soils are on hills and mountains and have slopes of 2 to 100 percent. The average annual precipitation is about 20 inches. These soils are used mostly for livestock grazing. Some of the less sloping areas are cropped to dryland grain. Natural vegetation is California sage, chamise, manzanita, purple needlegrass, and annual grasses (USDA 1986).

- Greenfield sandy loam, 2 to 9 percent slopes

The Greenfield series consists of deep well-drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent. The mean annual precipitation is about 15 inches. These soils are used for the production of a wide variety of irrigated field, forage and fruit crops and also for growing dryland grain and pasture. Vegetation on uncultivated areas consists of annual grass, forbs, some shrubs, and scattered oak trees (USDA 1986).

- Hanford coarse sandy loam, 2 to 9 percent slopes
- Hanford gravelly sandy loam, 2 to 9 percent slopes
- Hanford sandy loam, 2 to 9 percent slopes

The Hanford series consists of very deep well-drained soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains, and alluvial fans and have slopes of 0 to 15 percent. The mean annual precipitation is about 12 inches. Hanford soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants (USDA 1986).

- Hesperia fine loamy sand, 0 to 2 percent slopes
- Hesperia fine loamy sand, 2 to 5 percent slopes
- Hesperia fine sandy loam, 0 to 2 percent slopes
- Hesperia loam, 0 to 2 percent slopes
- Hesperia loamy fine sand, 0 to 2 percent slopes
- Hesperia loamy fine sand, 2 to 5 percent slopes
- Hesperia loamy fine sand, 0 to 2 percent slopes, hummocky

The Hesperia series consists of very deep well-drained soils that formed in alluvium derived primarily from granite and related rocks. Hesperia soils are on alluvial fans, valley plains and stream terraces and have slopes of 0 to 9 percent. The mean annual precipitation is about 8 inches. Hesperia soils are used for desert range, and for production of irrigated orchards, row crops, field crops, grain, hay, pasture, and grapes. Native vegetation consists of creosote bush in the high desert and sparse annuals in the valley (USDA 1986).

- Las Posas loam, 9 to 30 percent slopes
- Las Posas-Toomes rocky loams, 30 to 50 percent slopes

The Las Posas series consists of moderately deep, well-drained soils that formed in material weathered from basic igneous rocks. Las Posas soils are on mountainous uplands and have slopes of 5 to 50 percent. The mean annual precipitation is about 16 inches. Las Posas soils are used for growing irrigated citrus fruit, truck crops, and pasture, grain, or grain hay. Vegetation in uncultivated areas is mainly annual grasses, forbs, and broadleaf chaparral (USDA 1986).

- Ramona gravelly sandy loam, 9 to 30 percent slopes
- Ramona sandy loam, 9 to 30 percent slopes, eroded

The Ramona series is a member of the fine-loamy, mixed, thermic family of Typic Haploxeralfs. These soils are used mostly for production of grain, grain hay, pasture, irrigated citrus, olives, truck crops, and deciduous fruits. Uncultivated areas have a cover of annual grasses, forbs, chamise, or chaparral (USDA 1986).

- Riverwash
- Rosamond fine loamy sand
- Rosamond loam
- Rosamond loamy fine sand
- Rosamond loamy fine sand, hummocky

The Rosamond series consists of deep well-drained soils that formed in material weathered mainly from granitic alluvium. Rosamond soils are on the lower margin of the alluvial fans between the sloping fans and the playas and have slopes of 0 to 2 percent. The mean annual precipitation is about 5 inches. Large areas are used for desert range. Other extensive areas are irrigated and cropped to alfalfa and row crops. Native vegetation is rabbit brush, big sagebrush, a small amount of Atriplex, and a little annual and perennial grass and weeds (USDA 1986).

- Terrace escarpments
- Vista coarse sandy loam, 15 to 30 percent slopes
- Vista coarse sandy loam, 30 to 50 percent slopes

The Vista series consists of moderately deep well-drained soils that formed in material weathered from decomposed granitic rocks. Vista soils are on hills and mountainous uplands and have slopes of 2 to 75 percent. The mean annual precipitation is about 16 inches. Under irrigation, avocados and citrus are grown in areas of favorable temperature. A few small areas are used for growing winter truck crops. On areas of moderate relief, grain and hay are grown without irrigation. Range is a common use in areas that are not cultivated. The natural vegetation is annual grasses and forbs and such shrubs as California sagebrush, scrub oak, lilac, chamise, sumac, and flattop buckwheat (USDA 1986).

### 5.2.3 Reclaimed Water Pipeline

The following mapping units occur across the areas of the reclaimed water pipeline:

- Adelanto coarse sandy loam, 2 to 5 percent slopes
- Cajon loamy fine sand, 0 to 2 percent slopes, hummocky
- Cajon loamy sand, 0 to 2 percent slopes
- Cajon loamy sand, 2 to 9 percent slopes
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes
- Hesperia fine loamy sand, 0 to 2 percent slopes
- Hesperia fine sandy loam, 0 to 2 percent slopes
- Hesperia loam, 0 to 2 percent slopes
- Rosamond fine sandy loam
- Rosamond loam

### 5.2.4 Natural Gas Supply Pipeline

The following mapping units occur across the areas of the natural gas supply pipeline:

- Adelanto coarse sandy loam, 2 to 5 percent slopes
- Cajon loamy fine sand, 0 to 2 percent slopes, hummocky
- Cajon loamy sand, 0 to 2 percent slopes
- Cajon loamy sand, 2 to 9 percent slopes
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes
- Hesperia fine loamy sand, 0 to 2 percent slopes
- Hesperia fine sandy loam, 0 to 2 percent slopes

- Ramona coarse sandy loam, 2 to 5 percent slopes
- Rosamond loam
- Sorrento loam, 2 to 5 percent slopes

The Sorrento series consists of very deep well-drained soils that formed in alluvium mostly from sedimentary rocks. Sorrento soils are on alluvial fans and stabilized floodplains and have slopes of 0 to 15 percent. The mean annual precipitation is about 16 inches. Sorrento soils are used mainly for growing irrigated fruit, nut, field, forage, and truck crops, and some dry grain. Uncultivated areas are mostly annual grasses and forbs with sycamore along drainageways (USDA 1986).

### 5.2.5 Sanitary Wastewater Pipeline

The following mapping unit occurs across the areas of the sanitary wastewater pipeline:

- Cajon loamy sand, 0 to 2 percent slopes

## 5.3 Jurisdictional Waters

The Project as designed will avoid all state and federal jurisdictional waters (Figure 5 and Table 1). See Attachment 3 for the full Preliminary Determination report.

## 5.4 Habitat Communities

The biological composition of the Palmdale area presents a transition zone from montane plant communities to communities more commonly found in Mojave Desert conditions. The results of the general biological field assessment indicate that nine habitat communities occur throughout the various areas of the Project site. These include:

- Mojave Creosote Bush Scrub
- Joshua Tree Woodland
- Desert Saltbush Scrub
- Rabbitbrush Scrub
- Mojavean Juniper Scrub
- Mojave Riparian Forest
- Mojave Desert Wash Scrub
- Agricultural Land (active and fallow) and Orchards
- Urban and Disturbed/Developed Land

Figure 6 illustrates the general habitat communities on the Project site within a 1-mile radius of the power plant site and within a 1,000-foot radius of the Project's linear features. Photographs in Attachment 4 illustrate these habitat types. These communities are summarized separately below.

**Table 1. Potential Jurisdictional Status of Ephemeral Drainages and Perennial Waterways Found within 250 Feet of Palmdale Hybrid Power Project Corridor**

| Waterway (Figure Number in Figure 5) | Jurisdictional Status | Description |
|---|---|---|
| **1 (5-A)** | WSC | Unnamed ephemeral wash routed along eastern edge of roadway |
| **2 (5-B)** | WSC | Segment of ephemeral Little Rock Wash |
| **3 (5-C)** | WSC | Segment of ephemeral Rock Creek |
| **4 (5-D)** | WSC and WUS | California Aqueduct. Relatively permanent water with potential connection to navigable waters with link to interstate or foreign commerce |
| **5 (5-E)** | WSC | Unnamed ephemeral wash |
| **6 (5-E)** | WSC | Unnamed ephemeral wash |
| **7 (5-F)** | WSC | Unnamed ephemeral wash |
| **8 (5-G)** | WSC | Unnamed ephemeral wash |
| **9 (5-G)** | WSC | Unnamed ephemeral wash |
| **10 (5-H)** | WSC | Unnamed ephemeral wash |
| **11 (5-I)** | WSC | Unnamed ephemeral wash |
| **12 (5-J)** | WSC | Unnamed ephemeral wash |
| **13 (5-K)** | WSC | Unnamed ephemeral wash |
| **14 (5-L)** | WSC | Segment of ephemeral Little Rock Wash |
| **15 (5-M)** | WSC and WUS | Palmdale Ditch. Relatively permanent water with potential connection to navigable waters with link to interstate or foreign commerce |
| **16 (5-N)** | WSC | Unnamed ephemeral wash with riparian canopy |
| **17 (5-O)** | WSC | Unnamed ephemeral wash with riparian canopy |
| **18 (5-P)** | WSC | Unnamed ephemeral wash |
| **19 (5-Q)** | WSC | Unnamed ephemeral wash |
| **20 (5-Q)** | WSC | Unnamed ephemeral wash |
| **21 (5-R)** | WSC | Unnamed ephemeral 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.

### 5.4.1 Mojave Creosote Bush Scrub

Mojave creosote bush scrub (Holland 1986) is the dominant plant community below 3,000 or 4,000 feet in the southwestern region of the United States. It is extensive from the Death Valley region southward across the Mojave Desert to the little San Bernardino Mountains, eastward to northwestern Arizona and southern Nevada. This plant community is generally composed of widely-spaced shrubs of approximately 2 to 10 feet in height with bare ground between, and it typically intergrades with Joshua tree woodland and other desert scrub communities. This community is dominated by creosote bush and white bursage (*Ambrosia dumosa*). Other common plant species present throughout this community within the Project site include Nevada joint fir (*Ephedra nevadensis*), spiny hop-sage (*Grayia spinosa*), cheesebush (*Hymenoclea salsola*), winter fat (*Krascheninnikovia lanata*), and Joshua tree. Plant growth generally occurs during late winter and early spring months, when annual precipitation is sufficient. Many species of ephemeral herbs may flower in late March and April if the winter rains are sufficient.

Mojave creosote bush scrub is one of the three dominant vegetation communities of the power plant site, found primarily in the southeastern portion. Along the northern portion of the transmission line, it is found in small concentrations until becoming dominant in the southeastern portions. It is not found along the other linear facilities.

**Comment [S5]:** Acres? Veg. Map?

### 5.4.2 Joshua Tree Woodland

Joshua tree woodland (Holland 1986) is an open woodland with Joshua trees usually as the only arborescent species and numerous shrub species. This community is present on the desert slopes of the Southern Sierra Nevada, Tehachapi, and Transverse Ranges of Inyo, Kern, Los Angeles, San Bernardino, and northern Riverside counties from 2,500 to 5,000 feet elevation. It reaches eastward across the Mojave Desert to southwestern Utah, mostly on the slopes of mountains and mesas. This community is dominated by *Yucca* spp., evergreen shrubs (*Juniperus* spp.), semideciduous shrubs (*Eriogonum* spp., *Tetradymia* spp.), semisucculents (*Lycium* spp.), and succulents (*Opuntia* spp.). It typically intergrades with Mojave creosote bush scrub at lower elevations and Mojavean pinyon-juniper woodland at higher elevations. The main growing season is spring, with most growth limited by cold in winter and drought in summer and fall. Many species of ephemeral herbs may germinate following sufficient late fall or winter rains and flower in mid-spring.

Joshua tree woodland is one of the three dominant vegetation communities of the power plant site, stretching diagonally from the northeast portion to the southwest portion. Although Joshua trees are present throughout the linear facilities, this habitat community is only dominant in a few areas.

**Comment [S6]:** Acres? Veg Map? Sensitivity status?

### 5.4.3 Desert Saltbush Scrub

Desert saltbush scrub (Holland 1986) is characterized by low-growing, grayish, microphyllous shrubs and the presence of some succulent species. This community is widely scattered on margins of dry lake beds in the Colorado, Mojave, and Great Basin deserts. 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. The dominant saltbush species on site included four-winged saltbush (*Atriplex canescens*) and allscale (*Atriplex polycarpa*).

Desert saltbush scrub is not present on the power plant site, reclaimed water pipeline, or natural gas supply pipeline. However, it is dominant along the northern and eastern portions of the transmission line.

**Comment [S7]:** Acres, veg map, sensitivity status? Alkali Mariposa Lily 1B listed potential for these types of habitats.

### 5.4.4 Rabbitbrush Scrub

Rabbitbrush scrub (Holland 1986) is a disturbance-maintained community (fire, grazing, soil tilling). This community is found in the Great Basin and western margin of the Mojave Desert, reaching west across the Sierra-Cascade Axis into the drainages of Kern, Feather, and Pit Rivers. It is dominated by rubber rabbitbrush (*Chrysothamnus nauseosus*), usually about 3 feet tall, with fairly evenly spaced gray shrubs flowering in late summer or fall.

Rabbitbrush scrub is one of the three dominant vegetation communities of the power plant site, found in the northwest portion. It is only found in a couple locations along the transmission line, but is much more abundant along the reclaimed water pipeline and natural gas supply pipeline.

### 5.4.5 Mojavean Juniper Scrub

Mojavean juniper 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, rabbitbrush, and Nevada joint fir.

**Comment [S8]:** Acres? Veg map? Juniper woodland also disappearing in AV w/o mitigation consideration

Mojavean juniper scrub is only found along the southwestern portion of the transmission line, once the Project enters the foothills of the San Gabriel Mountain range. One other isolated community occurs at the southern end of the natural gas supply pipeline.

### 5.4.6 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. 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. The trees within this community are generally less than approximately 82 feet 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.

One small patch of Mojave riparian forest occurs along the transmission line, just west of where it crosses Little Rock Wash. Several cottonwood trees are present along with standing water.

### 5.4.7 Mojave Desert Wash Scrub

Mojave Desert wash scrub (Holland 1986) is characterized by a low scrubby, remarkably diverse scrub, but lacking the conspicuous microphyllous trees of desert dry wash woodland. This community is found throughout the Mojave Desert, typically occurring 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.

Two areas of Mojave Desert wash scrub are crossed by the transmission line. Both areas are part of the Little Rock Wash SEA.

**Comment [S9]:** Area and veg map? Will need Streambed agreement if imnpacted

### 5.4.8 Agricultural Land and Orchards

Agricultural land (Holland 1986) may be defined broadly as land used primarily for production of food and fiber. This type occurs throughout California, but is most widespread in and adjacent to the Great Central Valley and to a lesser extent in coastal plains and valleys. Orchards in California are typically open, single-species tree-dominated habitats, with an open understory.

Active and fallow agricultural lands are present along the northern portion of the transmission line. Abandoned (fallow) agricultural fields and overgrazed desert scrub areas support ruderal (weedy) plant species. The orchards present along Pearblossom Highway are pear orchards enclosed by chain-link fencing.

**Comment [S10]:** Good burrowing owl habitat and raptor foraging habitat, especially in winter where 16 raptor species may be found in the AV

### 5.4.9 Urban and Disturbed/Developed Land

Urban land (Holland 1986) is comprised of areas of intensive use with much of the land covered by structures. Included in this category are cities, transportation, power, and communications facilities, and areas such as those occupied by mills, shopping centers, industrial, commercial, and residential complexes, and institutions that in some instances may be isolated from urban areas.

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 cannot 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 sites. These areas include unsurfaced and paved roads, as well as developed areas supporting structures, and recently graded areas. 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 property (*e.g.* vehicles, scrap wood, appliances, furniture) occurs on others.

## 5.5 Plants

During the course of the general biological assessment and focused surveys, 162 plant species, including Joshua tree and 2 species of cacti, were detected on the Project site, buffer zone, and ZOI. Joshua trees and native cacti are managed as special-status plants by the CDNPA and regulated by the City. Attachment 5 includes the scientific and common names for all plant species detected on the Project site.

According to National Oceanic and Atmospheric Association (NOAA) data, mean rainfall totals for the winter season (*i.e.* December, January, February) in Palmdale from 1971 through 2000 equal 4.34 inches. A total of 4.31 inches was recorded during the 2007-2008 winter season. Notwithstanding that the timing of precipitation is a critical factor influencing the germination and growth of plants, the 2007-2008 winter precipitation for Palmdale suggests that plant productivity was adequate in Spring 2008 for conducting plant surveys.

## 5.6 General Wildlife

During the course of the 2008 general biological assessment and focused surveys, a total of 87 vertebrate species were detected on the Project site, buffer zone, and ZOI. These included 11 reptiles, 66 birds, and 10 mammals. Attachment 6 includes the scientific and common names for these species. It should be noted that relatively short-term inventories of this nature are limited in their scope by the seasonality, timing and duration of surveys, and the nocturnal and fossorial habits of many desert-dwelling animals. Therefore, the list of vertebrate species in Attachment 6 does not necessarily reflect the total number of animals that potentially occupy the Project site.

### 5.6.1 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, large 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 Palmdale, 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 sites do not support bodies of water. Additionally, it is unlikely that the sites are used by anyone for bird and/or wildlife watching, with the exception of perhaps the current residents of the City, who may bird watch or view wildlife incidentally. Furthermore, some areas near the sites are inhabited by people possessing unleashed, free-ranging, sometimes aggressive dogs, which have expressed aggression towards field personnel and are destructive to wildlife habitat. For the reasons discussed above, fish and wildlife species of commercial and recreational value do not occur within the Project site or vicinity.

### 5.6.2 Wildlife Movement Corridors

Wildlife movement corridors, also referred to as dispersal corridors, landscape linkages, or ETAs, 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 environmental changes, natural disasters, and normal dispersal. 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 daily, annually, 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 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 studies 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 man-made linear features and barriers often serve as areas that wildlife routinely use to access essential natural resources. Such areas (*i.e.* on-site drainages, ridgelines, small valleys) within the Project site may serve as potential wildlife corridors. Wildlife that would be most likely to routinely use on-site corridors would be coyote, kit fox, rabbit, bobcat, and migrating/foraging bird species. However, because of the highly fragmented habitat (*e.g.* highways, railroad tracks, development), corridors for flightless species are limited by these barriers.

**Comment [S11]:** But should be conducted for a project of this magnitude.

**Comment [S12]:** Elaborate on how this site figures into adjacent open space on a local and regional level. Wildlife do cross roads and railroad tracks. Unless completely surrounded by homes and urban uses potential for wildlife to move through the site to adjacent open lands exist.
How do transmission corridors in/near drainages like Little Rock Wash impact wildlife movement.
Will this project go through the LA County SEATAC committee since it includes an SEA?

## 5.7 Special-Status Biological Resources

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 CDFG, and are thus protected by the federal and state ESAs, respectively. State-listed species and certain other desert-occurring plants are also protected under provisions of the

NPPA and CDNPA. 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. 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.* Under CEQA, conservation status (endangered, rare, or threatened) is also applied to species that may not be included in any formal federal or state listing if the species is considered to likely become endangered within the foreseeable future throughout all or a significant portion of its range. Local jurisdictions (*e.g.* City of Palmdale) also regulate specified biological resources (*e.g.* Joshua trees, cacti, and other plant species) as locally sensitive.

The literature review consisted of an analysis of the CNDDB (Report in Attachment 7), CNPS Inventory, other biological reports, and consultation with other biologists having experience in the vicinity of the Project site. This review identified 60 special-status biological resources known to occur in the vicinity (within approximately 10 miles) of the Project site (Figure 7). These resources include: 2 fish, 25 plants, 2 amphibians, 6 reptiles, 10 birds, 9 mammals, and 6 habitat communities. Table 2 provides a complete list of these sensitive biological resources and their respective conservation status and occurrence potential in the Project vicinity.

The general biological assessment and focused field surveys resulted in the detection of six special-status biological resources throughout various areas of the Project site, buffer zone, and ZOI (Figure 8). All six of these species were birds. Table 3 provides GPS coordinates for the special-status species and sign observed, including all bird nests identified during surveys. In addition, for the purposes of this assessment, the MGS will be assumed to be present on the power plant site and along portions of the transmission line (see Attachment 2). A summary of these special-status biological resources is provided below.

### 5.7.1 Special-Status Fish

Two special-status fish species have been reported from the vicinity of the Project site based on the literature review conducted (Table 2). These include Santa Ana sucker (*Catostomus santaanae*) and unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*). Neither of these species was observed during 2006 or 2008 surveys nor have potential to occur on the Project site because of a lack of suitable habitat.

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| **Fish** | | | | | | |
| Santa Ana sucker<br>*Catostomus santaanae* | T | CSC | None | Endemic to Los Angeles basin south coastal streams. Habitat generalist, but prefers sand-rubble-boulder bottoms. Usually found in small to medium-sized (<7 m wide) permanent streams in water ranging in depth from a few centimeters to a meter or more. Los Angeles, San Gabriel, and Santa Ana Rivers. | Year-round | Absent. Suitable habitat not present. |
| Unarmored threespine stickleback<br>*Gasterosteus aculeatus williamsoni* | E | E | None | Weedy pools, backwaters, and among emergent vegetation at the stream edge in small southern CA streams. Currently restricted to the upper Santa Clara River drainage in Los Angeles & Ventura Co., San Antonio Creek on Vandenburg Air Force Base, San Luis Obispo Co., and an isolated population in San Felipe Creek in San Diego Co. A remnant population exists in Shay Creek, San Bernardino County. | Year-round | Absent. Suitable habitat not present. |
| **Plants** | | | | | | |
| San Gabriel manzanita<br>*Arctostaphylos gabrielensis* | None | None | 1B.2 | Rocky outcrops in chaparral habitat. Known only from Mill Creek Summit divide in the San Gabriel Mountains. | Mar | Absent. Not observed during focused surveys. |
| San Antonio milkvetch<br>*Astragalus lentiginosus* var. *antonius* | None | None | 1B.3 | Dry slopes in upper and lower montane coniferous forest. | Apr-Jul | Absent. Not observed during focused surveys. |
| Lancaster milkvetch<br>*Astragalus preussii* var. *laxiflorus* | None | None | 1B.1 | Alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands. Chenopod scrub. Known in CA only from near Lancaster and Edwards AFB, where extremely rare. | Mar-May | Absent. Probably extirpated. Last observed in 1902. |
| Alkali mariposa lily<br>*Calochortus striatus* | None | None | 1B.2 S | Alkaline meadows and ephemeral washes in chaparral, chenopod scrub, Mojavean desert scrub, and meadows. | Apr-Jun | Absent. Not observed during focused surveys. |
| Peirson's morning-glory<br>*Calystegia peirsonii* | None | None | 4.2 | Chaparral, coastal scrub, chenopod scrub, cismontane woodland, lower montane coniferous forest. Often in disturbed areas or along roadsides or in grassy, open areas. | Apr-Jun | Absent. Not observed during focused surveys. |
| White pygmy-poppy<br>*Canbya candida* | None | None | 4.2 S | Sandy habitats in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. | Mar-Jun | Absent. Not observed during focused surveys. |
| Brown fox sedge<br>*Carex vulpinoidea* | None | None | 2.2 | Marshes and swamps, riparian woodland. | May-Jun | Absent. Not observed during focused surveys. |
| Mt. Gleason paintbrush<br>*Castilleja gleasonii* | None | R | 1B.2 | Occurs on open flats or slopes in granitic soil in chaparral, pinyon and juniper woodland, and lower montane coniferous forest. Restricted to the San Gabriel Mountains. | May-Jun | Absent. Not observed during focused surveys. |
| Parry's spineflower<br>*Chorizanthe parryi* var. *parryi* | None | None | 3.2 | Dry, sandy soils on dry slopes and flats in coastal scrub and chaparral habitats. | Apr-Jun | Absent. Not observed during focused surveys. |
| Kern Canyon clarkia<br>*Clarkia xantiana* ssp. *parviflora* | None | None | 4.2 | Often sandy, sometimes rocky, slopes, sometimes roadsides in chaparral, cismontane woodland, Great Basin scrub, and valley and foothill grassland. | May-Jun | Absent. Not observed during focused surveys. |
| Golden cholla | None | None | None | Mojave and Sonoran deserts, desert grasslands, juniper and | Mar-Jun | Occurs. Protected by City of Palmdale Native Desert |

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| *Cylindropuntia echinocarpa* | | | | oak-juniper woodlands, flats, bajadas, canyons, sandy, loam, alluvial to gravelly substrates. | | Vegetation Ordinance. |
| California juniper<br>*Juniperus californica* | None | None | None | Pinyon and juniper woodland, Joshua tree woodland, foothill woodland. | N/A | Occurs. Protected by City of Palmdale Native Desert Vegetation Ordinance. |
| Pale-yellow layia<br>*Layia heterotricha* | None | None | 1B.1 S | Open areas of alkaline or clay soils in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. | Mar-Jun | Absent. Not observed during focused surveys. |
| Lemon lily<br>*Lilium parryi* | None | None | 1B.2 | Wet, mountainous terrain, generally in forested areas. On shady edges of streams, in open boggy meadows & seeps, lower montane coniferous forest, riparian forest, upper montane coniferous forest. | Jul-Aug | Absent. Not observed during focused surveys. |
| San Gabriel linanthus<br>*Linanthus concinnus* | None | None | 1B.2 | Dry rocky slopes, often in Jeffrey pine/canyon oak forest, but also found in chaparral, upper and lower montane coniferous forest. | Apr-Jul | Absent. Not observed during focused surveys. |
| Sagebrush loeflingia<br>*Loeflingia squarrosa* var. *artemisiarum* | None | None | 2.2 S | Sandy flats and dunes, sandy areas around clay slicks. Desert dunes, Great Basin scrub, Sonoran desert scrub. | Apr-May | Absent. Not observed during focused surveys. |
| Peirson's lupine<br>*Lupinus peirsonii* | None | None | 1B.3 | Decomposed granite slide and talus, on slopes and ridges in Joshua tree woodland, upper and lower montane coniferous forest, and pinyon and juniper woodland. Known only from the San Gabriel Mountains. | Apr-Jun | Absent. Not observed during focused surveys. |
| California muhly<br>*Muhlenbergia californica* | None | None | 4.3 | Usually found near streams or seeps in coastal sage scrub, chaparral, lower montane coniferous forest, and meadows. | Jun-Sep | Absent. Not observed during focused surveys. |
| Beavertail cactus<br>*Opuntia basilaris* | None | None | None | Dry, rocky desert slopes. | Mar-Jun | Occurs. Protected by City of Palmdale Native Desert Vegetation Ordinance. |
| Short-joint beavertail<br>*Opuntia basilaris* var. *brachyclada* | None | None | 1B.2 S | Sandy soil or coarse, granitic loam in chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland, and riparian woodland. | Apr-Jun | Absent. Not observed during surveys. |
| Rock Creek broomrape<br>*Orobanche valida* ssp. *valida* | None | None | 1B.2 | On slopes of loose decomposed granite; parasitic on various chaparral shrubs. Chaparral, pinyon and juniper woodland. | May-Sep | Absent. Not observed during focused surveys. |
| Parish's popcornflower<br>*Plagiobothrys parishii* | None | None | 1B.1 | Alkaline soils, mesic sites in Great Basin scrub and Joshua tree woodland. 750-1400m. | Mar-Jun | Absent. Not observed during focused surveys. |
| Mason's neststraw<br>*Stylocline masonii* | None | None | 1B.1 S | Sandy washes in chenopod scrub and pinyon and juniper woodland. 100-1200m. | Mar-May | Absent. Not observed during focused surveys. |
| Greata's aster<br>*Symphyotrichum greatae* | None | None | 1B.3 | Mesic canyons in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. 300-2010m. | Jun-Oct | Absent. Not observed during focused surveys. |
| Joshua tree<br>*Yucca brevifolia* | None | None | None | Joshua tree woodland and within interface zone of that vegetation community & others. 500–2000 m. | Apr-May | Occurs. Protected by City of Palmdale Native Desert Vegetation Ordinance. |
| **Amphibians** | | | | | | |

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| Arroyo toad<br>*Bufo californicus* | E | CSC | None | Breeding adults require overflow pools adjacent to inflow channels free of predatory fishes. Exposed pools that are shallow, sand- or gravel-based, and have a low current velocity are strongly favored. Breeding pools must occur in the vicinity (10-100 meters) of juvenile and adult habitat, which consists of a shoreline or central bar and stable, sandy terraces. Stable, sandy terraces should possess a moderately well-developed, but scattered shrub and tree vegetation overstory, and typically have mulefat, California sycamore, Fremont's cottonwood, or coast live oak present. | Jan-Aug | Absent. Lack of suitable habitat. Two historic records from Little Rock Creek, but greater than 1 km away. |
| Mountain yellow-legged frog<br>*Rana muscosa* | E | CSC | None | Inhabits shallow, permanent rocky streams that are partially shaded or have filtered light at moderate to high elevations. Absent from small creeks because of insufficient depth for adequate refuge and overwintering. | Year-round | Absent. Lack of suitable habitat. |
| **Reptiles** | | | | | | |
| Southwestern pond turtle<br>*Actinemys marmorata pallida* | None | CSC | S | Inhabits permanent or nearly permanent bodies of water. Requires basking sites and upland oviposition sites in the vicinity of the aquatic site. May be active year-round; typically become active in March or April, and disappear to overwintering sites in October or November. | Mar-Nov | Absent. Lack of suitable habitat. |
| Silvery legless lizard<br>*Anniella pulchra pulchra* | None | CSC | None | Occur primarily in areas with sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, or pine-oak woodland. Also occur in desert scrub at the western edge of the Mojave Desert. They are often found under, or in the close vicinity of, surface objects such as logs, rocks, old boards and the compacted debris of woodrat nests. Prefer soils with high moisture content. | Year-round | Absent. Lack of suitable habitat. |
| Desert tortoise<br>*Gopherus agassizii* | T | T | None | Most common in desert scrub, desert wash, and Joshua tree habitats. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred. | Feb-Nov | Power plant site, reclaimed water pipeline, natural gas supply pipeline, sanitary wastewater pipeline: Absent. North-south portion of transmission line segment 1 and southeast portion of transmission line segment 2: Low. |
| Coast (San Diego) horned lizard<br>*Phrynosoma coronatum blainvillii* | None | CSC | None | Inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils. | Mar-Oct | Moderate. Historic records near alignments (transmission line, reclaimed water pipeline, and natural gas supply pipeline). |

**Comment [S13]:** Several records exist for the AV within alluvial soils including one record JT woodlands. Easily overlooked and dismissed

**Comment [S14]:** Observed? Survey results?

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| Coast (California) horned lizard<br>*Phrynosoma coronatum frontale* | None | CSC | S | Occurs in sandy loam areas and on alkali flats in several habitat types, including areas with an exposed gravelly-sandy substrate containing scattered shrubs, clearings in riparian woodlands, dry uniform chamise chaparral, and annual grassland with scattered perennial seepweed or saltbush. | Apr-Oct | Low. Potential habitat present. |
| Two-striped garter snake<br>*Thamnophis hammondii* | None | CSC | S | Inhabits perennial and intermittent streams having rocky beds bordered by willow thickets or other dense vegetation. | Mar-Nov | Absent. Lack of suitable habitat. |
| **Birds** | | | | | | |
| Cooper's hawk<br>*Accipiter cooperii* | None | CSC | None | Dense stands of live oak, riparian deciduous, or other forest habitats near water used most frequently. Nests in deciduous trees, usually 6-15 m (20-50 ft) above the ground. | Year-round | Nesting: Absent. Lack of suitable habitat.<br>Foraging: Occurs. Observed at power plant site. |
| Tricolored blackbird<br>*Agelaius tricolor* | BCC | CSC | S | Breeds in freshwater marshes dominated by cattails or bulrushes, willows, blackberries, thistles, and diverse upland and agricultural areas. May forage in various scrub plant associations. Preferred roost sites include cattail and bulrush marshes near suitable foraging areas in pasturelands and croplands. | Year-round | Absent. Lack of suitable habitat. |
| Burrowing owl<br>*Athene cunicularia* | BCC | CSC | S | Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. | Year-round | Occurs. One individual observed on transmission line segment 1 (1,200' zone of influence). Others areas with suitable habitat present. |
| Ferruginous hawk<br>*Buteo regalis* | None | CSC | None | Fairly common winter resident of grasslands and agricultural areas in southwestern California. Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Roosts in open areas, usually in a lone tree or utility pole. | Sep-Apr (Wintering) | Nesting: Absent. Lack of suitable habitat. No breeding records from California.<br>Foraging: Occurs. One individual observed along transmission line segment 1 (1,200' ZOI). |
| Swainson's hawk<br>*Buteo swainsoni* | BCC | T | None | Generally migrate in flocks that can be as large as 5,000–10,000 individuals, always during daylight, typically soaring in thermals, and rarely over water. Birds rest and feed in grasslands and harvested fields, especially where grasshoppers are numerous, often perching on fence posts, telephone poles, and power poles. Large flocks may roost at night in trees | Mar-May<br>Jul-Oct (Migration) | Nesting: Absent. Migratory.<br>Foraging: Low. Potentially could forage in agricultural fields. |
| Vaux's swift<br>*Chaetura vauxi* | None | CSC | None | During migration, utilizes forests and open areas. Roost trees and chimneys important during migration as they allow swifts to avoid exposure and conserve body heat. | Apr-May<br>Sep (Migration) | Nesting: Absent. Migratory.<br>Foraging: Occurs. Observed on transmission line segment 1. |
| Mountain plover<br>*Charadrius montanus* | BCC | CSC | S | Coastal prairies, alkaline flats, tilled fields, and Bermuda grass fields. Generally a bird of open, flat, dry tablelands with low, sparse vegetation. Avoids forested or shrubby montane landscapes and seeks areas of local aridity, disturbance, or when found on prairies, of short, intensively grazed grass. | Sep-Mar (Wintering) | Nesting: Absent. Migratory.<br>Foraging: Low. Historic record of foraging birds in agricultural fields near transmission line segment 1. |

**Comment [S15]:** TCB feed in weedy fields. They are documented to breed in the AV.

**Comment [S16]:** Several; current nesting pairs in N. LA Co. and S. Kern Co.. One Winter record in JT woodland Prefer windrow trees near ag fields. Any near or on site? Check NDDB.

**Comment [S17]:** Not very difficult to find Mt. Plover in short/ sparse ag fields. In the AV in winter.

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| Prairie falcon<br>*Falco mexicanus* | BCC | CSC | None | Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Extensive foraging, to marshlands and ocean shores. | Year-round | Nesting: Absent. Suitable nesting habitat not present. Foraging: Moderate. Suitable foraging habitat and prey present. |
| Loggerhead shrike<br>*Lanius ludovicianus* | BCC | CSC | None | Open country with short vegetation: pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands. Breeders usually settle near isolated trees or large shrubs. | Year-round | Occurs. Observed on Project site. |
| Le Conte's thrasher<br>*Toxostoma lecontei* | BCC | CSC | None | Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground. | Year-round | Occurs. Observed on Project site. |
| **Mammals** | | | | | | |
| Pallid bat<br>*Antrozous pallidus* | None | CSC | S | A wide variety of habitats, including deserts, grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. | Year-round | Low. Potential foraging habitat present. |
| Pallid San Diego pocket mouse<br>*Chaetodipus fallax pallidus* | None | CSC | None | Occurs in desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy herbaceous areas, usually in association with rocks or coarse gravel. | Year-round | Unknown. Potential habitat present. Comprehensive nocturnal trapping surveys were not performed for this Project. |
| Western mastiff bat<br>*Eumops perotis californicus* | None | CSC | S | Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, and desert scrub. Roosts in crevices in cliff faces, high buildings, trees, and tunnels. | Year-round | Low. Potential foraging habitat present. |
| Long-eared myotis<br>*Myotis evotis* | None | None | S | Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts. | Year-round | Low. Potential foraging habitat present. |
| Yuma myotis<br>*Myotis yumanensis* | None | None | S | Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. | Year-round | Low. Lack of suitable habitat, but historic record at Little Rock Reservoir (~1.5 miles south of transmission line segment 2), so foraging individuals potentially present. |
| Southern grasshopper mouse<br>*Onychomys torridus ramona* | None | CSC | None | Arid desert habitats of the Mojave Desert, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. | Year-round | Unknown. Potential habitat present. Comprehensive nocturnal trapping surveys were not performed for this Project. |
| San Joaquin pocket mouse<br>*Perognathus inornatus inornatus* | None | None | S | Typically found in grasslands, blue oak savannas, shrubby ridge tops and hillsides, and open, sandy areas with grasses and forbs. Needs friable soils for burrowing. | Year-round | Absent. Lack of suitable habitat. |

**Comment [S18]:** Recommend considering size of project.

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |
| Mohave ground squirrel<br>*Spermophilus mohavensis* | None | T | None | Restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties. Optimal habitats are open desert scrub, alkali desert scrub, and Joshua tree woodland. Also feeds in annual grasslands. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. | Feb-Aug | Moderate. Historic records throughout area. Suitable habitat present. Assuming presence. |
| American badger<br>*Taxidea taxus* | None | CSC | None | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils, and open, uncultivated ground. Prey on burrowing rodents. Dig burrows for cover. | Year-round | Low. Potential habitat present. |
| **Habitat Communities** | | | | | | |
| Canyon Live Oak Ravine Forest | None | INV | None | Dominated by *Quercus chrysolepis*, a broadleaved sclerophyll. Typically forms forests with little understory up to 20m tall in canyons on north-facing slopes, and low, chaparral-like stands less than 10m tall on south-facing slopes. Trees often with multiple trunks, probably from crown-sprouting after fires. | Year-round | Absent. |
| Mojave Riparian Forest | None | INV | None | A relatively open, broadleafed, winter-deciduous streamside forest dominated by *Populus fremontii*, *Salix gooddingii*, and *S. laevigata*. The open canopy allows a dense shrubby understory of *Atriplex lentiformis* ssp. *torreyi*, *Chrysothamnus nauseosus*, *Rosa woodsii*, and *Salix exigua* to prosper. Along the larger desert rivers (Owens, Mojave, Colorado) where the vegetation has not been cleared for irrigated agriculture or been dewatered by upstream diversions. Generally below 4,000 feet. | Year-round | Occurs. Some small riparian patches occur along transmission line segment 2. |
| Southern California Threespine Stickleback Stream | None | INV | None | See unarmored threespine stickleback habitat and distribution. | Year-round | Absent. |
| Southern Cottonwood Willow Riparian Forest | None | INV | None | Tall, open, broadleafed winter-deciduous riparian forests dominated by *Populus fremontii*, *Populus trichocarpa*, and several tree willows. Understories usually are shrubby willows. Found along perennially wet stream reaches of the Tranverse and Peninsular ranges, from Santa Barbara County south to Baja California Norte and east to the edge of the deserts. | Year-round | Absent. |
| Southern Riparian Scrub | None | INV | None | A scrubby streamside thicket, varying from open to impenetrable, dominated by any of several willows. This early community may succeed to any of several riparian woodland or forest types absent severe flooding disturbance. | Year-round | Occurs. Some small riparian patches occur along transmission line segment 2. |
| Southern Sycamore Alder Riparian Woodland | None | INV | None | A tall, open, broadleafed, winter-deciduous streamside woodland dominated by *Platanus racemosa* (and often also *Alnus rhombifolia*). These stands seldom form closed canopy forests, and even may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. | Year-round | Absent. |

1/ Status:

**Comment [S19]:** Easily overlooked. Are found in the AV

## Table 2. Special-Status Species Occurring or Potentially Occurring in the Project Vicinity

| Resource<br>Common Name<br>*Scientific Name* | Status[1/] | | | Habitat and Distribution | Activity/ Bloom Period | Occurrence Probability |
|---|---|---|---|---|---|---|
| | Federal | State | CNPS/ BLM | | | |

**FEDERAL (United States Fish and Wildlife Service)**
- E = Federally listed as Endangered
- T = Federally listed as Threatened
- C = Federal Candidate for listing as threatened or endangered
- BCC = Bird of Conservation Concern
- D = Federally Delisted

**STATE (California Department of Fish and Game)**
- E = California state-listed as Endangered
- T = California state-listed as Threatened
- R = California state-listed as Rare
- CSC = California Special Concern species
- INV = Communities that are either known or believed to be of high priority for inventory in CNDDB

**CNPS (California Native Plant Society)**
- 1B = CNPS list of plants that are rare, threatened, or endangered in California and elsewhere
- 2 = CNPS list of plants that are rare, threatened, or endangered in California, but more common elsewhere
- 3 = CNPS list of plants that require more information
- 4 = CNPS list of plants that have a limited distribution (Watch List)
- .1 = Seriously endangered in California
- .2 = Fairly endangered in California
- .3 = Not very endangered in California

**BLM (Bureau of Land Management)**
- S = BLM Sensitive species

**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, or no suitable habitat is present.
- Unknown = Distribution and habitat use has not been clearly determined.

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| **POWER PLANT SITE** | | | | | |
| 1 | 398849 | 3833942 | Corvid/Raptor nest | JT | 20 |
| 2 | 398847 | 3833950 | Passerine nest x2 | JT | 8 |
| 3 | 398824 | 3833861 | Passerine nest x2 | JT | 8 |
| 4 | 398794 | 3833787 | Corvid/Raptor nest | JT | 20 |
| 5 | 398770 | 3833644 | Passerine nest | JT | 7 |
| 6 | 398622 | 3833625 | Passerine nest | JT | 6.5 |
| 7 | 398548 | 3833861 | Mourning Dove nest | Ground | 0 |
| 8 | 398551 | 3833619 | Passerine nest x2 | JT | 13 |
| 9 | 398521 | 3833593 | Corvid/Raptor nest | JT | 12 |
| 10 | 398523 | 3833792 | Passerine nest | JT | 9 |
| 11 | 398418 | 3833130 | Passerine nest | JT | 8 |
| 12 | 398271 | 3833440 | Passerine nest | JT | 8 |
| 13 | 398282 | 3833462 | Passerine nest | JT | 8 |
| 14 | 398176 | 3834139 | Corvid/Raptor nest | JT | 25 |
| 15 | 398184 | 3834180 | Corvid/Raptor nest | JT | 30 |
| 16 | 398173 | 3833758 | Common Raven nest | JT | 30 |
| 17 | 398094 | 3833224 | Passerine nest | JT | 8 |
| 18 | 398079 | 3833562 | Passerine nest | JT | 13 |
| 19 | 398029 | 3833410 | Common Raven nest | JT | 20 |
| 20 | 398025 | 3834116 | Loggerhead Shrike x2 | | |
| 21 | 398012 | 3833787 | Passerine nest | JT | 7 |
| 22 | 397992 | 3833858 | Passerine nest | JT | 9 |
| 23 | 397939 | 3834000 | Passerine nest | JT | 8 |
| 24 | 397910 | 3833503 | Passerine nest | JT | 12 |
| 25 | 397874 | 3833936 | Passerine nest | JT | 8 |
| 27 | 397788 | 3833916 | Passerine nest | JT | 15 |
| 28 | 397802 | 3833886 | Passerine nest | JT | 9 |
| 29 | 397795 | 3833218 | Passerine nest | JT | 10 |
| 30 | 397758 | 3833163 | Horned Lark nest | Ground | 0 |
| 31 | 397720 | 3833302 | Passerine nest | JT | 8 |
| 32 | 397687 | 3833498 | Corvid/Raptor nest | JT | 20 |
| 33 | 397673 | 3833858 | Passerine nest | JT | 10 |
| 34 | 397651 | 3833446 | Passerine nest | JT | 8 |

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| 35 | 397568 | 3833674 | Corvid/Raptor nest | JT | 18 |
| 36 | 397529 | 3833284 | Common Raven nest | JT | 22 |
| 37 | 397542 | 3833734 | Passerine nest | JT | 8 |
| 38 | 397528 | 3833900 | Passerine nest | JT | 7 |
| 39 | 397471 | 3833599 | Passerine nest | JT | 9 |
| 40 | 397427 | 3833247 | Corvid/Raptor nest | JT | 25 |
| 41 | 397427 | 3833247 | Passerine nest | JT | 10 |
| 42 | 397400 | 3833844 | Passerine nest | JT | 15 |
| 43 | 397403 | 3833674 | Corvid/Raptor nest | JT | 10 |
| 44 | 397388 | 3833177 | Passerine nest | JT | 7 |
| 45 | 397293 | 3833254 | Passerine nest x2 | JT | 9 |
| 46 | 398718 | 3834234 | Passerine nest | JT | 5 |
| 47 | 398708 | 3834215 | Passerine nest | JT | 10 |
| 48 | 398722 | 3833730 | Passerine nest | JT | 15 |
| 49 | 398690 | 3833753 | Passerine nest | JT | 9 |
| 50 | 398666 | 3833122 | Passerine nest | JT | 12 |
| 51 | 398666 | 3833196 | Passerine nest | JT | 6 |
| 52 | 398656 | 3834036 | Passerine nest | JT | 15 |
| 53 | 398661 | 3834181 | Passerine nest | JT | 8 |
| 54 | 398661 | 3834164 | Passerine nest | JT | 7 |
| 55 | 398648 | 3834065 | Passerine nest | JT | 5 |
| 56 | 398566 | 3833870 | Le Conte's Thrasher | | |
| 57 | 398660 | 3833770 | Passerine nest | JT | 6 |
| 58 | 398646 | 3833189 | Passerine nest | JT | 12 |
| 59 | 398657 | 3833131 | Passerine nest | JT | 8 |
| 60 | 398631 | 3833700 | Passerine nest | JT | 14 |
| 61 | 398629 | 3834206 | Passerine nest | JT | 15 |
| 62 | 397537 | 3834483 | Corvid/Raptor nest | JT | 15 |
| 63 | 398087 | 3834496 | Common Raven nest | JT | 25 |
| 64 | 397215 | 3833489 | Corvid/Raptor nest | JT | 10 |
| 65 | 398641 | 3834427 | Le Conte's Thrasher | | |
| 66 | 396313 | 3831937 | Desert Tortoise Class 5 burrow | | |

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| **TRANSMISSION LINE** | | | | | |
| 67 | 398915 | 3834532 | Common Raven nest | JT | 20 |
| 68 | 399120 | 3834346 | Corvid/Raptor nest | JT | 20 |
| 69 | 399514 | 3834344 | Corvid/Raptor nest | T-Line Pole | 50 |
| 70 | 401361 | 3835157 | Corvid/Raptor nest | JT | 25 |
| 71 | 401465 | 3835843 | Common Raven nest | JT | 25 |
| 72 | 402441 | 3836056 | Corvid/Raptor nest | JT | 20 |
| 73 | 408276 | 3835867 | Passerine nest | JT | 20 |
| 74 | 408526 | 3835809 | Corvid/Raptor nest | JT | 30 |
| 75 | 400049 | 3835097 | Loggerhead Shrike | | |
| 76 | 399291 | 3834791 | Common Raven nest | JT | 30 |
| 77 | 402106 | 3835561 | Loggerhead Shrike | | |
| 78 | 402094 | 3835382 | Corvid/Raptor nest | JT | 15 |
| 79 | 401356 | 3835159 | Corvid/Raptor nest | JT | 28 |
| 80 | 401543 | 3835168 | Loggerhead Shrike | | |
| 81 | 403381 | 3836253 | Ferruginous Hawk | | |
| 82 | 408565 | 3835155 | Common Raven nest | JT | |
| 83 | 408449 | 3835478 | Corvid/Raptor nest | JT | |
| 84 | 401372 | 3835360 | Passerine nest | JT | 7 |
| 85 | 409942 | 3835782 | Corvid/Raptor nest | JT | 20 |
| 86 | 408714 | 3835958 | Common Raven nest | Tower | 75 |
| 87 | 410439 | 3835724 | Corvid/Raptor nest | JT | 20 |
| 88 | 412797 | 3835766 | Passerine nest | JT | 22 |
| 89 | 412848 | 3834379 | Corvid/Raptor nest | JT | 30 |
| 90 | 410625 | 3835474 | Corvid/Raptor nest | JT | 15 |
| 91 | 411582 | 3835024 | Corvid/Raptor nest | JT | 25 |
| 92 | 412304 | 3834259 | Common Raven nest | JT | 12 |
| 93 | 412781 | 3834752 | Passerine nest | JT | 7 |
| 94 | 414038 | 3830164 | Common Raven nest | JT | 10 |
| 95 | 407667 | 3836011 | Corvid/Raptor nest | JT | 25 |
| 96 | 414262 | 3830789 | Common Raven nest | JT | 20 |
| 97 | 414589 | 3831091 | Corvid/Raptor nest | JT | 30 |
| 98 | 415828 | 3827957 | Common Raven nest | JT | 15 |
| 100 | 415969 | 3830357 | Passerine nest | JT | 20 |

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| 101 | 416021 | 3830088 | Passerine nest | JT | 12 |
| 102 | 416113 | 3830812 | Common Raven nest | JT | 25 |
| 104 | 416038 | 3829027 | Corvid/Raptor nest | JT | 25 |
| 105 | 414843 | 3830978 | Corvid/Raptor nest | JT | |
| 106 | 414570 | 3831896 | Loggerhead Shrike | | |
| 107 | 414570 | 3831746 | Common Raven nest | JT | 30 |
| 108 | 415928 | 3830174 | Loggerhead Shrike | | |
| 109 | 415011 | 3830541 | Common Raven nest | JT | 22 |
| 110 | 414932 | 3830226 | Common Raven nest | JT | 22 |
| 111 | 415351 | 3831315 | Corvid/Raptor nest | JT | |
| 112 | 415190 | 3829461 | Common Raven nest | JT | 25 |
| 113 | 416453 | 3829276 | Loggerhead Shrike | | |
| 114 | 413026 | 3827630 | Corvid/Raptor nest | JT | |
| 115 | 413329 | 3827659 | Common Raven nest | JT | |
| 116 | 414200 | 3827662 | Corvid/Raptor nest | JT | |
| 117 | 414569 | 3827583 | Common Raven nest | JT | |
| 118 | 416734 | 3827038 | Loggerhead Shrike | | |
| 119 | 416732 | 3824780 | Common Raven nest | JT | |
| 120 | 416108 | 3825164 | Common Raven nest | JT | |
| 121 | 412857 | 3829002 | Corvid/Raptor nest | JT | 20 |
| 122 | 414303 | 3827813 | Corvid/Raptor nest | JT | 20 |
| 123 | 415676 | 3827817 | Corvid/Raptor nest | JT | 15 |
| 124 | 414376 | 3827682 | Mourning Dove nest | Velvet Ash | 9 |
| 125 | 416952 | 3824396 | Loggerhead Shrike | | |
| 126 | 416502 | 3824365 | Passerine nest | JT | 9 |
| 127 | 417319 | 3822099 | Common Raven nest | JT | 12 |
| 128 | 417385 | 3822700 | Burrowing Owl with burrows | | |
| 129 | 416784 | 3819442 | Common Raven nest | T-Line Tower | 120 |
| 130 | 416490 | 3819528 | Common Raven nest | T-Line Tower | 120 |
| 131 | 413492 | 3828287 | Corvid/Raptor nest | JT | 12 |
| 132 | 413501 | 3828690 | Common Raven nest | JT | 15 |
| 133 | 413174 | 3828450 | Corvid/Raptor nest | JT | 20 |
| 134 | 413778 | 3827535 | Corvid/Raptor nest | JT | 15 |

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| 135 | 414393 | 3827249 | Common Raven nest | JT | 15 |
| 136 | 416197 | 3824007 | Common Raven nest | JT | 15 |
| 137 | 410773 | 3819361 | Cactus Wren nest | Silver Cholla | |
| 138 | 411357 | 3819390 | Passerine nest | JT | |
| 140 | 409163 | 3819200 | Passerine nest | Silver Cholla | |
| 141 | 410029 | 3819293 | Passerine nest | JT | 7 |
| 142 | 410755 | 3819356 | Cactus Wren nest | Silver Cholla | |
| 146 | 409257 | 3819220 | Cactus Wren nest | Silver Cholla | |
| 148 | 409103 | 3819212 | Loggerhead Shrike x2 | | |
| 150 | 415035 | 3819534 | Common Raven nest | T-Line Tower | 120 |
| 151 | 414630 | 3819496 | Common Raven nest | T-Line Tower | 120 |
| 152 | 408931 | 3819261 | Common Raven nest | | |
| 153 | 409231 | 3819163 | Common Raven nest | T-Line Tower | 120 |
| 154 | 409406 | 3819306 | Common Raven nest | T-Line Tower | 120 |
| 155 | 410749 | 3820006 | Corvid/Raptor nest | JT | 15 |
| 156 | 409215 | 3818842 | Corvid/Raptor nest | JT | 15 |
| 157 | 412152 | 3820238 | Corvid/Raptor nest | JT | 10 |
| 158 | 409561 | 3819014 | Common Raven nest | T-Line Tower | 120 |
| 159 | 410423 | 3819140 | Common Raven nest | T-Line Tower | 120 |
| 160 | 413325 | 3819369 | Common Raven nest | T-Line Tower | 120 |
| 161 | 413785 | 3819410 | Common Raven nest | T-Line Tower | 120 |
| 162 | 412771 | 3819360 | Common Raven nest | T-Line Tower | 120 |
| 163 | 410774 | 3819130 | Common Raven nest | T-Line Tower | 120 |
| 164 | 411357 | 3819221 | Common Raven nest | T-Line Tower | 120 |
| 165 | 411594 | 3819202 | Common Raven nest | T-Line Tower | 120 |
| 166 | 411833 | 3819267 | Common Raven nest | T-Line Tower | 120 |
| 167 | 412024 | 3819247 | Common Raven nest | T-Line Tower | 120 |
| 168 | 411139 | 3819160 | Common Raven nest | T-Line Tower | 120 |
| 169 | 406741 | 3819017 | Common Raven nest | T-Line Tower | 120 |
| 170 | 408150 | 3819185 | Common Raven nest | T-Line Tower | 120 |
| 171 | 407634 | 3819113 | Corvid/Raptor nest | T-Line Tower | 120 |
| 172 | 408531 | 3819189 | Common Raven nest | T-Line Tower | 120 |
| 173 | 408164 | 3819097 | Hummingbird nest | Encelia | 2.5 |
| 174 | 405626 | 3818920 | Corvid/Raptor nest | T-Line Tower | 120 |

**Table 3. GPS Coordinates for Special-Status Species and Sign Observed**

| ID | UTM NAD 83 | | Description | Nest site* | Height (ft) |
|---|---|---|---|---|---|
| | Easting | Northing | | | |
| 175 | 406139 | 3819023 | Corvid/Raptor nest | T-Line Tower | 120 |
| 176 | 405619 | 3818985 | Cactus Wren nest | Silver Cholla | |
| 177 | 401274 | 3818221 | Corvid/Raptor nest | T-Line Tower | 120 |
| 178 | 400949 | 3818214 | Common Raven nest | T-Line Tower | 120 |
| 179 | 403515 | 3818128 | Passerine nest | Sambucus | |
| 180 | 402679 | 3818199 | Common Raven nest | T-Line Tower | 120 |
| 181 | 401278 | 3818223 | Common Raven nest | T-Line Tower | 120 |
| 182 | 400039 | 3818225 | Red-tailed Hawk nest | T-Line Tower | 120 |
| 183 | 398709 | 3818085 | Corvid/Raptor nest | T-Line Tower | 120 |
| 184 | 399043 | 3818189 | Common Raven nest | T-Line Tower | 120 |
| 198 | 416700 | 3820860 | Corvid/Raptor nest | JT | 15 |
| 199 | 414538 | 3827440 | Corvid/Raptor nest | JT | 15 |
| 201 | 415986 | 3825384 | Passerine nest | JT | 20 |
| 202 | 416714 | 3821628 | Corvid/Raptor nest | JT | 15 |
| 204 | 412839 | 3827914 | Vaux's Swift | | |
| **RECLAIMED WATER PIPELINE** | | | | | |
| 186 | 396881 | 3830598 | Corvid/Raptor nest | JT | 20 |
| 187 | 396777 | 3831564 | Loggerhead Shrike x2 | | |
| 188 | 396709 | 3832060 | Common Raven nest | JT | 20 |
| 190 | 397263 | 3829851 | Corvid/Raptor nest | JT | 15 |
| 191 | 397275 | 3830161 | Corvid/Raptor nest | JT | 12 |
| 192 | 397274 | 3830160 | Corvid/Raptor nest | JT | 10 |
| 193 | 397973 | 3830081 | Corvid/Raptor nest | JT | 15 |
| 194 | 398043 | 3830059 | Passerine nest | JT | 12 |
| 195 | 398162 | 3829776 | Corvid/Raptor nest | JT | 20 |

***LEGEND**

JT Joshua tree
T-Line Transmission Line
Pole Transmission Line Wooden Mono-pole
Tower Transmission Line Steel Lattice Tower

### 5.7.2 Special-Status Plants

Twenty-one special-status plant species have been reported from the vicinity of the Project site based on the literature review (Table 2). These include San Gabriel manzanita, San Antonio milkvetch, Lancaster milkvetch, alkali mariposa lily, Peirson's morning-glory, white pygmy-poppy, brown fox sedge, Mt. Gleason paintbrush, Parry's spineflower, Kern Canyon clarkia, pale-yellow layia, lemon lily, San Gabriel linanthus, sagebrush loeflingia, Peirson's lupine, California muhly, short-joint beavertail, Rock Creek broomrape, Parish's popcorn-flower, Mason's neststraw, and Greata's aster. None of these species was observed during the 2008 surveys. Focused surveys on the power plant site conducted in 2006 also did not detect special-status plants.

Four species protected under the City of Palmdale Native Desert Vegetation Ordinance and CDNPA were observed during surveys: golden cholla, California juniper, beavertail cactus, and Joshua tree. These species, not listed as endangered or threatened by any of the regulatory agencies, were observed throughout the Project site. Surveying and mapping of these species in areas of disturbance will be completed prior to the start of Project construction.

### 5.7.3 Special-Status Amphibians

Two special-status amphibian species have been reported from the vicinity of the Project site based on the literature review (Table 2). These include arroyo toad (*Bufo californicus*) and Sierra Madre yellow-legged frog (*Rana muscosa*). Neither of these species was observed during 2006 or 2008 surveys nor have potential to occur on the Project site because of a lack of suitable habitat.

### 5.7.4 Special-Status Reptiles

Six special-status reptile species have been reported from the vicinity of the Project site based on the literature review (Table 2). These include southwestern pond turtle (*Actinemys marmorata pallida*), silvery legless lizard (*Anniella pulchra pulchra*), desert tortoise, coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*), coast (California) horned lizard (*Phrynosoma coronatum frontale*), and two-striped garter snake (*Thamnophis hammondii*). None of these species was observed during 2008 surveys. Focused surveys on the power plant site conducted in 2006 also did not detect these species. Three of these species are considered to have some potential to occur on the Project site and are discussed below.

#### 5.7.4.1 Desert Tortoise (*Gopherus agassizii*)

The Mojave population segment of the desert tortoise is federally and state listed as threatened by the USFWS and CDFG, respectively. The Mojave population segment includes all tortoises occurring west and north of the Colorado River. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats in a variety of terrain types, including alluvial fans, valleys, rocky hillsides, and washes. They require friable soil for burrow and nest construction. 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. They are herbivores and feed on a variety of plants including annual herbs and perennial grasses.

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, 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 (Boarman 2003).

Threats to desert tortoises include loss or degradation of habitat, vandalism, poaching, intentional killing, predation on young tortoises by the common raven (*Corvus corax*) and other predators (*e.g.* kit fox, snakes, etc.), and disease (*e.g.* Mycoplasmosis). 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 garbage dumping, 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 (Boarman 2003).

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 16 miles northeast of the Project site within the Fremont-Kramer Desert Wildlife Management Area (DWMA). In 1984, the desert tortoise range boundary was located near the proposed Project site, but by 2002, that boundary had receded north to Edwards Air Force Base (EAFB) (BLM 2006).

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 a particular location. Sign can be detected at any time of the year and always indicates suitable habitat, if not occupied habitat.

Although there is no desert tortoise critical habitat present on or near the Project site (Figure 3), the habitats occurring on the Project site (*e.g.* desert scrub, desert wash, and Joshua tree) are habitats typically utilized by desert tortoises. Therefore, focused surveys were conducted in 2006 and 2008. Focused surveys conducted in 2006 on the power plant site did not detect desert tortoise or sign. Focused surveys conducted in 2008 (Table 4) did not detect desert tortoise on the Project site, buffer zone, or ZOI. **One potential desert**

**tortoise burrow (Class 5: good condition, undetermined species, but possibly tortoise) was found during surveys (Figure 8; photograph in Attachment 4). This burrow was located on the 3,960-foot ZOI transect for the power plant site (west of site). The mouth of the burrow was overgrown with vegetation, and no sign of recent use (*e.g.* scat, tracks, etc.) was evident.**

Completed survey data forms are presented in Attachment 8**. No desert tortoises were observed during focused surveys, and no sign were observed (with the exception of the one possible burrow on the 3,960-foot ZOI).** The highly fragmented nature of the Project site with numerous barriers (*e.g.* highways, railroad tracks, development) makes it highly unlikely that desert tortoises are present or could wander onto the Project site from adjacent lands – the connectivity to known occupied habitat is very low. Known occupied habitat is 16 miles northeast of the Project site, spanning numerous barriers. Therefore, the occurrence potential on the power plant site, reclaimed water pipeline, natural gas supply pipeline, and sanitary wastewater pipeline is absent. The occurrence potential along the north-south portion of transmission line segment 1 and the southeast portion of transmission line segment 2 is considered to be low.

#### 5.7.4.2 Coast (San Diego) Horned Lizard (*Phrynosoma coronatum blainvillii*)

The coast (San Diego) horned lizard is designated as a CSC. Populations are 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). It 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. Habitat requirements 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 2003, Sherbrooke 1981). Populations are declining due to loss, degradation, and fragmentation of suitable habitat, extensive collecting, and introduction of the argentine ant, which out-competes the preferred native harvester ants (CDFG 2005).

Known occurrences (16 records from 1922 to 2004) range from 0.1 to 12 miles from the Project site (CDFG 2008). Although the coast (San Diego) horned lizard was not observed during focused surveys, historic records and suitable habitat along the foothills make the occurrence potential for this species moderate.

#### 5.7.4.3 Coast (California) Horned Lizard (*Phrynosoma coronatum frontale*)

The coast (California) horned lizard is designated a CSC and BLM sensitive species. The *P. c. frontale* subspecies intergrades with the *P. c. blainvillii* subspecies in southern Kern County and much of northern Santa Barbara, Ventura, and Los Angeles counties (f

**Table 4. Desert Tortoise Survey Data**

| Date (2008) | Surveyors[1] | Time | Area/Location Surveyed[2] | Percent Cloud Cover | Wind (mph) | Temp. (°F) |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Apr 01 | MA, SF, NMo, NMu | 07:00-16:00 | Plant | 0-15 | 0-15 | 45-70 |
| Apr 02 | MA, SF, NMo, NMu | 07:00-16:00 | Plant | 15-90 | 1-15 | 52-66 |
| Apr 03 | MA, SF, NMo, NMu | 07:00-15:00 | Plant | 0-5 | 1-10 | 47-72 |
| Apr 04 | MA, SF, NMo, NMu | 06:30-12:00 | Plant | 0-60 | 0-3 | 38-76 |
| Apr 07 | MA, JB, SF, AH, NMu | 07:00-17:00 | Plant & Plant Buffer | 5-40 | 2-15 | 48-70 |
| Apr 08 | MA, JB, SF, AH, NMu | 07:00-12:00 | Plant ZOI | 0-50 | 0-15 | 54-63 |
| Apr 09 | MA, JB, SF, AH | 07:00-16:00 | Water ROW, Buffer, & ZOI | 0-20 | 5-20 | 47-68 |
| Apr 10 | MA, JB, SF, AH | 09:00-16:00 | Water ROW, Buffer, & ZOI | 0 | 0-5 | 65-79 |
| Apr 11 | MA, JB, SF, AH | 07:00-12:00 | Gas ROW, Buffer, & ZOI | 0 | 0-10 | 46-72 |
| Apr 14 | MA, JB, SF, AH, NMu | 07:00-17:00 | T-Line ROW, Buffer, & ZOI | 0 | 0-20 | 60-88 |
| Apr 15 | MA, JB, SF, AH, NMu | 07:00-16:00 | T-Line ROW, Buffer, & ZOI | 0-10 | 5-22 | 46-68 |
| Apr 16 | JB, SF, AH, NMu | 07:30-16:00 | T-Line ROW, Buffer, & ZOI | 0 | 0-8 | 45-75 |
| Apr 17 | MA, JB, SF, AH, NMu | 07:00-16:30 | T-Line ROW, Buffer, & ZOI | 0 | 0-12 | 48-80 |
| Apr 18 | MA, JB, SF, AH, NMu | 07:30-14:00 | T-Line ROW, Buffer, & ZOI | 0-40 | 0-10 | 64-86 |
| Apr 21 | MA, JB, AH, NMu, HR, DS | 08:30-15:00 | T-Line Buffer & ZOI | 0 | 0-8 | 58-82 |
| Apr 22 | MA, JB, AH, NMu, HR, DS | 08:00-17:00 | T-Line ROW & Buffer | 0 | 1-18 | 58-79 |
| Apr 23 | MA, JB, AH, NMu, HR, DS | 07:30-15:00 | T-Line ROW | 0-5 | 1-25 | 52-62 |
| Apr 24 | JB, AH, NMu, HR, DS | 07:00-16:00 | T-Line ROW, Buffer, & ZOI | 0 | 1-15 | 45-76 |
| Apr 25 | MA, JB, AH, NMu, HR, DS | 07:30-17:00 | T-Line ROW, Buffer, & ZOI | 0 | 0-8 | 60-85 |
| Apr 26 | JB, AH | 06:45-15:00 | T-Line Buffer | 0 | 0-5 | 55-85 |

1 Surveyor Initials:
- MA = Matt Amalong, Wildlife Biologist, AMEC
- JB = Jim Boone, Botanist/Ecologist, Desert Wildlife Consultants, LLC
- SF = Steve Ferrand, Wildlife Biologist, Nevada Biological Consulting, LLC
- AH = Alex Heindl, Herpetologist, Desert Walkabouts, Inc.
- NMo = Nathan Moorhatch, Wildlife Biologist, AMEC
- NMu = Nathan Mudry, Wildlife Biologist, eGIS Services, LLC
- HR = Heather Rothbard, Botanist, AMEC
- DS = Dennis Strong, Herpetologist, Nevada Biological Consulting, LLC

2 Area/Location:
- Plant = Power Plant Site
- T-Line = Transmission Line
- Water = Reclaimed Water Pipeline
- Gas = Natural Gas Supply Pipeline
- ROW = Right-of-Way
- Buffer = 100, 200, 300, 400, & 500-foot Transects
- ZOI = 1,200, 2,400, 3,960 (Power Plant Site), & 5,280 (Power Plant Site) Zone of Influence Transects

2005). It occurs in sandy loam areas and on alkali flats in several habitat types, including areas with an exposed gravelly-sandy substrate containing scattered shrubs, clearings in riparian woodlands, dry uniform chamise chaparral, and annual grassland with scattered perennial seepweed or saltbush (Jennings and Hayes 1994). The coast (California) horned lizard appears to have a life history very similar to the related coast (San Diego) horned lizard. Coast (California) horned lizards are recorded as preying on beetles and ants, but probably take many other insects which are seasonally abundant (Stebbins 2003). Populations are becoming increasingly fragmented with continued development of the region.

The known occurrence (1991) is 5 miles west of the Project site (CDFG 2008). Because the coast (California) horned lizard was not observed during focused surveys, the occurrence potential for this species is low.

### 5.7.5 Special-Status Birds

**Comment [S20]:** Include discussion on northern harrier, short-eared owl and long-eared owl. Site provides foraging and may provide nesting habitat. Reference latest CA Bird Species of Special Concern 2008 publication

Ten special-status bird species have been reported from the vicinity of the Project site based on the literature review (see Table 2). These include Cooper's hawk, tricolored blackbird (*Agelaius tricolor*), burrowing owl, ferruginous hawk, Swainson's hawk (*Buteo swainsoni*), Vaux's swift, mountain plover (*Charadrius montanus*), prairie falcon (*Falco mexicanus*), loggerhead shrike, and Le Conte's thrasher. Six of these species (Cooper's hawk, burrowing owl, ferruginous hawk, Vaux's swift, loggerhead shrike, Le Conte's thrasher) were observed during the 2008 field surveys. Surveys on the power plant site conducted in 2006 detected three species (prairie falcon, loggerhead shrike, Le Conte's thrasher). Nine of these species occur or are considered to have some potential to occur on the Project site and are discussed below.

#### 5.7.5.1 Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk is designated as a CSC. It has declined throughout California as a breeding bird. It prefers dense stands of live oak, riparian deciduous, or other forest habitats near water. Nests are usually located in deciduous trees, usually 20 to 50 feet above the ground. Cooper's hawks forage over adjacent areas, primarily predating smaller bird species (Curtis et al. 2006). Habitat destruction, mainly in lowland riparian areas, is probably the main threat, although direct or indirect human disturbance at nest sites can be equally detrimental (CDFG 2005).

Two Cooper's hawks were observed in 2008 flying over the power plant site during the field surveys. Although suitable nesting habitat is not present on the Project site, this species has been observed foraging over the power plant 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 throughout the Project site.

#### 5.7.5.2 Burrowing Owl (*Athene cunicularia*)

The burrowing owl is federally designated as a Bird of Conservation Concern (BCC), state designated as a CSC, and designated BLM sensitive. It is a small ground-dwelling owl that occurs in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation (Haug et al. 1993). 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. It is a subterranean nester, typically utilizing pre-existing burrows (*e.g.* California ground squirrel, kit fox, drain pipes, culverts, etc.). The entrance of the burrow is often adorned with animal dung, feathers, debris, and other small objects (CDFG 2005). 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. 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, ongoing residential and commercial development, and rodent control programs.

Evidence of burrowing owls (*i.e.* one live individual, suitable habitat with potential burrows present, speaking with landowners, etc.) was apparent throughout various areas of the Project site footprint, 500-foot buffer areas, and within the 2,400-foot ZOI during the general biological surveys and focused surveys (Figures 3 and 8). Known occurrences (11 records from 1999 to 2006) range from 2 to 6 miles from the Project site (CDFG 2008). One live individual was observed in 2008 along the 1,200-foot ZOI transect for the transmission line. Although this owl is technically off site (outside the proposed disturbance footprint and the 500-foot buffer zone area as defined by the Burrowing Owl Consortium Survey Guidelines), it could fly into the disturbance area. Additionally, numerous areas of suitable habitat containing small mammal burrows (primarily California ground squirrels) were observed across much of the Project site and within the ZOI. These burrows provide ample nesting opportunities for this species.

#### 5.7.5.3 Ferruginous Hawk (*Buteo regalis*)

The ferruginous hawk is designated as a CSC. It is a fairly common winter resident of grasslands and agricultural areas in southwestern California. It frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats, and roosts in open areas, usually in a lone tree or utility pole. Ferruginous hawks eat mostly rabbits, ground squirrels, and mice (Bechard and Schmutz 1995). Urban development may contribute to loss of suitable wintering habitat in California (CDFG 2005).

One ferruginous hawk was observed in 2008 on the 1,200-foot ZOI survey along the transmission line (Figure 8). Although the species has not been observed to breed in California, suitable foraging habitat is present over the Project site. During winter, ferruginous 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 (CDFG 2005).

**Comment [S21]:** A discussion on value of project site on wintering raptors and the cumulative loss of habitat in the AV should be discussed.

Known occurrences (2 records from 1998 to 1999) range from 8 to 9 miles from the Project site (CDFG 2008).

#### 5.7.5.4 Swainson's Hawk (*Buteo swainsoni*)

The Swainson's hawk is federally designated as a BCC and state listed as threatened. 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). The majority of Swainson's hawk territories in the Central Valley are in riparian systems adjacent to suitable foraging habitats. Swainson's hawks often nest peripherally to riparian systems of the valley as well as utilizing lone trees or groves of trees in agricultural fields. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes crops such as vineyards, orchards, certain row crops, rice, corn and cotton crops (England et al. 1997). Threats include the loss of agricultural lands to various residential and commercial developments, habitat loss due to riverbank protection projects, conversion from agricultural crops that provide abundant foraging opportunities to crops such as vineyards and orchards which provide fewer foraging opportunities, shooting, pesticide poisoning of prey animals and hawks on wintering grounds, and competition from other raptors (CDFG 2005).

**Comment [S22]:** I observed SWHA foraging in JT woodlands in the AV. This was a winter bird and a field data sheet was submitted to NDDB.

Known occurrences (3 records from 1979 to 1999) range from 3 to 4 miles from the Project site (CDFG 2008). Swainson's hawks only very rarely breed or nest in southern California (CDFG 2005). 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 on any of the Project site. For this reason, nesting Swainson's hawks are considered to be absent from the Project site. Suitable foraging habitat is present throughout the Project site, so the occurrence potential for foraging individuals is low.

**Comment [S23]:** More recent records exist. Contact Pete Bloom for records.

#### 5.7.5.5 Vaux's Swift (*Chaetura vauxi*)

Vaux's swift is designated as a CSC. It 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 (Bull and Collins 2007).

No known records have been reported from the Project vicinity, but Vaux's swifts were observed in 2008 foraging over the sites during spring migration (Figure 8). However, this species does not nest in southern California (CDFG 2005). Therefore, Vaux's swift is expected to forage over the sites during migration only.

#### 5.7.5.6 Mountain Plover (*Charadrius montanus*)

The mountain plover is federally designated as a BCC, state designated as a CSC, and designated BLM sensitive. It is a winter resident and occurs in coastal prairies, alkaline flats,

tilled fields, and Bermuda grass fields (CDFG 2005). Generally a bird of open, flat, dry tablelands with low, sparse vegetation, it avoids forested or shrubby montane landscapes and seeks areas of local aridity, disturbance, or when found on prairies, of short, intensively grazed grass (Knopf and Wunder 2006).

One known occurrence (2004) of a mountain plover was observed foraging in an agricultural field less than 1 mile from the transmission line (CDFG 2008). Because of suitable foraging habitat in the Project vicinity, the occurrence potential for this species is low.

#### 5.7.5.7 Prairie Falcon (*Falco mexicanus*)

The prairie falcon is federally designated as a BCC and state designated as a CSC. Populations in the California deserts are still very high and probably close to carrying capacity, but will be negatively affected if recreational use of these lands increases at its current rate (CDFG 2005). It typically nests on cliffs that provide ample nesting niches (*e.g.* holes, cracks, ledges, rock shelters) and forages 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 sources of prey (Steenhof 1998).

Seven known occurrences (1976-1997) have been reported in the Project vicinity (CDFG 2008). One individual was observed foraging on the power plant site during the 2006 surveys, but none were observed during the 2008 surveys. Suitable nesting habitat is not present, but suitable foraging habitat is present. The occurrence potential for foraging individuals is moderate.

#### 5.7.5.8 Loggerhead Shrike (*Lanius ludovicianus*)

The loggerhead shrike is federally designated as a BCC and state designated as a CSC. 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. It occurs in open country with short vegetation: pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, agricultural fields, riparian areas, and open woodlands (Yosef 1996). Breeders usually settle near isolated trees or large shrubs. Creosote bush scrub and Joshua tree woodland plant communities are favored by the species within the western Mojave Desert (CDFG 2005).

The loggerhead shrike was observed on the Project site, buffer zone, and ZOI by AMEC biologists on several occasions during the 2006 and 2008 surveys (Figure 8). Because the species appears to be resident on the Project site, it is likely that the loggerhead shrike nests on the site.

#### 5.7.5.9 Le Conte's Thrasher (*Toxostoma lecontei*)

The Le Conte's thrasher is federally designated as a BCC and state designated as a CSC. It is a desert resident, primarily of open desert wash, desert scrub, alkali desert scrub, and

desert succulent scrub habitats. It commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2 to 8 feet above ground (Sheppard 1996). 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. Most of its habitat is also preferred racing grounds for the growing numbers of off-road vehicle enthusiasts (CDFG 2005).

Two Le Conte's thrashers were observed on the power plant site and in the buffer zone during the 2008 surveys (Figure 8). They were also observed during the 2006 surveys. Additionally, suitable nesting habitat is present throughout much of the Project site.

### 5.7.6 Special-Status Mammals

**Comment [S24]:** Discuss presence of desert kit fox. They are at the edger of their range here and an important part of the wildlife diversity in LA County.

Nine special-status mammal species have been reported from the vicinity of the Project site based on the literature review (see Table 2). These include pallid bat (*Antrozous pallidus*), pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), western mastiff bat (*Eumops perotis californicus*), long-eared myotis (*Myotis evotis*), Yuma myotis (*Myotis yumanensis*), southern grasshopper mouse (*Onychomys torridus ramona*), San Joaquin pocket mouse (*Perognathus inornatus inornatus*), MGS, and American badger (*Taxidea taxus*). None of these species was observed during the 2008 surveys. Focused surveys on the power plant site conducted in 2006 also did not detect these species. Eight of these species are considered to have some potential to occur on the Project site and are discussed below.

#### 5.7.6.1 Pallid Bat (*Antrozous pallidus*), Western Mastiff Bat (*Eumops perotis californicus*), Long-Eared Myotis (*Myotis evotis*), Yuma Myotis (*Myotis yumanensis*)

All four bat species are designated BLM sensitive. The pallid bat and western mastiff bat are also designated CSC.

The pallid bat prefers a wide variety of habitats, including deserts, grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forests. It is most common in open, dry habitats with rocky areas for roosting (CDFG 2005).

The western mastiff bat prefers open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, and desert scrub. It roosts in crevices in cliff faces, high buildings, trees, and tunnels (CDFG 2005).

The long-eared myotis prefers coniferous woodlands and forests. Nursery colonies are in buildings, crevices, spaces under bark, and snags. It uses caves primarily as night roosts (CDFG 2005).

The Yuma myotis prefers open forests and woodlands with sources of water over which to feed. Its distribution is closely tied to bodies of water. Maternity colonies are in caves, mines, buildings, or crevices (CDFG 2005).

Each bat species has been reported once (pallid: 1942; western mastiff: 1929; long-eared: 1998; Yuma: 1999), and those records range from 1 to 12 miles from the Project site (CDFG 2008). Because of potential habitat present, there is a low occurrence potential of these species on the Project site. Comprehensive bat surveys were not performed for this Project.

#### 5.7.6.2 Pallid San Diego Pocket Mouse (*Chaetodipus fallax pallidus*)

The pallid San Diego pocket mouse is designated as a CSC. It occurs in sandy herbaceous areas, usually in association with rocks or coarse gravel, in desert wash, desert scrub, desert succulent scrub, and pinyon-juniper habitats. This subspecies occurs primarily on the margins of the western Mojave Desert and the northern slopes of the San Bernardino and San Gabriel mountains (CDFG 2005).

Known occurrences (3 records from 1951 to 1967) range from 5 to 10 miles from the Project site (CDFG 2008). Because of potential habitat present, there is potential of this species on the Project site Comprehensive nocturnal trapping surveys were not performed for this Project.

#### 5.7.6.3 Southern Grasshopper Mouse (*Onychomys torridus ramona*)

The southern grasshopper mouse is designated as a CSC. It occurs in arid desert habitats of the Mojave Desert, especially scrub habitats with friable soils for digging. It prefers low to moderate shrub cover (CDFG 2005).

One known occurrence (1988) of a southern grasshopper mouse has been reported 6.5 miles east of the Project site (CDFG 2008). Because of potential habitat present, there is potential of this species on the Project site. Comprehensive nocturnal trapping surveys were not performed for this Project.

#### 5.7.6.4 Mohave Ground Squirrel (*Spermophilus mohavensis*)

The MGS is state listed as threatened. It is restricted to the western Mojave Desert, and occurred historically from near Palmdale on the southwest, southeast to Lucerne Valley, northwest to Olancha, 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). Habitats used by this species include creosote bush scrub, various types of saltbush scrub, and Joshua tree woodland (CDFG 2005). The 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. 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. The MGS is threatened by loss and degradation of its habitat due to clearing for agriculture and military activities and for urban, suburban, and rural development, livestock grazing, and off-road vehicle use (CDFG 2005).

Known occurrences (21 records from 1930 to 1992) range from 0.5 to 10 miles from the Project site (CDFG 2008). No MGS were observed on the Project site during the focused biological surveys conducted in 2008, but no MGS trapping survey was conducted in 2008. MGS trapping surveys conducted on the power plant site in 2006 by Eremico Biological Services (2006) and CSU Stanislaus (2006) (both reports located in Attachment 2) did not detect any MGS. Leitner (2008, report located in Attachment 2) conducted a habitat assessment of the power plant site and linear facilities. His results can be briefly summarized as:

- Power plant site – good quality habitat is present, but its value is reduced since it is an isolated patch of habitat surrounded by unsuitable habitat; 377 acres permanently disturbed.
- Construction laydown area – unsuitable habitat.
- Transmission line – composed of suitable and unsuitable habitat (28 of the 35.6 miles is in the historic range of MGS); 6.5 acres permanently disturbed.
- Reclaimed water pipeline – composed of poor quality habitat and unsuitable habitat.
- Natural gas supply pipeline – composed of poor quality habitat and unsuitable habitat.
- Sanitary wastewater pipeline – suitable habitat. No disturbance anticipated since using City street ROWs.

As noted earlier, despite the negative trapping results obtained in 2006, the Project applicant has elected to assume presence of the MGS in suitable habitats on the power plant site and along portions of the transmission line (Figure 3), and will consult with CDFG for Project impacts to this species. Take permits will be obtained and mitigation measures incorporated to reduce Project impacts below a level of significance.

#### 5.7.6.5 American Badger (*Taxidea taxus*)

The American badger is designated as a CSC. Badger populations have declined drastically in California within the last century. The principal habitat requirements seem to be sufficient food, friable soils, and relatively open, uncultivated ground. Grasslands, savannas, and mountain meadows near timberline are preferred. Badgers prey primarily on burrowing rodents such as gophers, ground squirrels, marmots, and kangaroo rats. Deliberate shooting and trapping, cultivation (they do not survive on cultivated land), and agricultural and urban developments have been major factors in their decline (CDFG 2005).

One known occurrence (1930) of a badger has been reported from 6 miles east of the Project site (CDFG 2008). Because of potential habitat present, there is a low occurrence potential of this species on the Project site. Comprehensive mammal surveys were not performed for this Project.

**Comment [S25]:** Badger have been found on LA County Sanitation Dist. Lands in the AV. Badger should be assumed present absent focused surveys.

### 5.7.7 Special-Status Habitat Communities

Six special-status habitats have been reported from the vicinity of the site based on the literature review conducted (see Table 2). These include Canyon Live Oak Ravine Forest, Mojave Riparian Forest, Southern California Threespine Stickleback Stream, Southern

Cottonwood Willow Riparian Forest, Southern Riparian Scrub, and Southern Sycamore Alder Riparian Woodland. These communities are either known or believed to be of high priority for inventory in CNDDB (CDFG 2008). Two communities that occur on the Project site are Mojave Riparian Forest and Southern Riparian Scrub.

### 5.7.8 Significant Ecological Areas

There are 11 individual SEAs within 10 miles of the Project site (Figure 9). The County of Los Angeles General Plan proposes all-inclusive SEAs to include the present individual SEAs. The 11 individual SEAs would be included in the three SEAs discussed below.

#### 5.7.8.1 Antelope Valley SEA

The proposed Antelope Valley SEA would include Little Rock Wash, Big Rock Wash, Alpine Butte, Lovejoy Butte, Piute Butte, Saddleback Butte State Park, Edwards Air Force Base, and Rosamond Lake. Only Little Rock Wash is crossed by the Project. The other SEAs range from approximately 0.6 to 8 miles from the Project site.

Little Rock Wash runs from the San Gabriel Mountains to the Mojave Desert and is crossed by the transmission line twice. It contains desert saltbush scrub, Mojave creosote bush scrub, and desert riparian habitats and provides nesting habitat for birds and a variety of mammals. Little Rock Wash supports diverse wildlife, serves as a migration corridor, and helps in the seed dispersal of desert plants.

#### 5.7.8.2 San Andreas Rift Zone SEA

Ritter Ridge, located within the proposed San Andreas Rift Zone SEA, is located between the Sierra Pelona foothills and the Antelope Valley (approximately 4 miles west of the Project site). Ritter Ridge has a mix of Joshua trees and California junipers on the northern slopes, creosote bush scrub in the desert floor, and desert chaparral on the southern slopes. The area is a refuge for migratory birds and a habitat of 97 vertebrate species. The combination of desert and foothill plant species makes it a valuable ecological area.

#### 5.7.8.3 Santa Clara River SEA

The proposed Santa Clara River SEA would include Kentucky Springs and Santa Clara River. Kentucky Springs is located at the terminus of the transmission line at the Vincent Substation. Santa Clara River is approximately 5 miles southwest of Vincent Substation.

# 6.0 PROJECT EFFECT/IMPACT ANALYSIS

Anticipated direct, indirect, and cumulative impacts of the Project have been analyzed. These impacts have been assessed individually as well as collectively with respect to the Project. Mitigation measures specific to the Project have been designed to reduce anticipated impacts to both species and habitats.

## 6.1 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.

Permanent (long-term) impacts are those actions that result in irreversible damage to, or loss of, natural resources associated with biological systems. Permanent 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 3 years. Examples of 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 (short-term) 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, and assembly or placement of project structures or equipment on undisturbed areas.

### 6.1.1 Permanent 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 434 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. The loss of these vegetation communities is a direct, permanent impact. The remaining 1.5 acres of disturbance would be within disturbed/ developed or agricultural land that does not provide habitat for special-status species. The amount of each vegetation community that will be directly impacted within each Project component area is depicted in Table 5 and discussed in detail below.

**Table 5. Direct Permanent Surface Disturbance Acreage* per Affected Habitat Community**

| Vegetation Community | Power Plant | Construction Laydown Area | Transmission Line Segment 1 | Transmission Line Segment 2 | Reclaimed Water Pipeline | Natural Gas Supply Pipeline | Sanitary Wastewater Pipeline | TOTAL |
|---|---|---|---|---|---|---|---|---|
| Mojave Creosote Bush Scrub | 94 | 0 | 3.24 | 0.23 | 0 | 0 | 0 | 97.47 acres |
| Joshua Tree Woodland | 189 | 0 | 0.25 | 0.03 | 0 | 0 | 0 | 189.28 acres |
| Desert Saltbush Scrub | 0 | 0 | 2.55 | 0 | 0 | 0 | 0 | 2.55 acres |
| RabbitbrushScrub | 94 | 50 | 0.16 | 0 | 0 | 0 | 0 | 144.16 acres |
| Mojavean Juniper Scrub | 0 | 0 | 0 | 0.51 | 0 | 0 | 0 | 0.51 acres |
| Mojave Riparian Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 acres |
| Mojave Desert Wash Scrub | 0 | 0 | 0.03 | 0.01 | 0 | 0 | 0 | 0.04 acre |
| Agricultural Land | 0 | 0 | 1.32 | 0 | 0 | 0 | 0 | 1.32 acres |
| Urban & Disturbed/ Developed Land | 0 | 0 | 0.25 | 0 | 0 | 0 | 0 | 0.25 acres |
| **TOTAL** | 377 acres | 50 acres | 7.8 acres | 0.78 acres | 0 acres | 0 acres | 0 acres | 435.58 acres |

* Estimated disturbance acreage calculations:

- Power Plant site: 100% disturbance.
- Construction Laydown Area: 100% disturbance.
- Transmission Line Segment 1 (100% of disturbance will be in undisturbed habitat): 7 poles/mile (200 $ft^2$/pole); 7 access roads/mile (14'x50'); 4 laydown areas (200'x200'); miscellaneous facilities (10% of total)
- Transmission Line Segment 2 (25% of disturbance will be in undisturbed habitat): 7 poles/mile (200 $ft^2$/pole); no new access roads; 2 laydown areas (200'x200'); miscellaneous facilities (10% of total)
- Reclaimed Water Pipeline: No disturbance since using existing City Street ROW.
- Natural Gas Supply Pipeline: No disturbance since using existing City Street ROW.
- Sanitary Wastewater Pipeline: No disturbance since using existing City Street ROW.

#### 6.1.1.1 Power Plant

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 377 acres of land that currently supports approximately 189 acres of Joshua tree woodland, 94 acres of Mojave creosote bush scrub, and 94 acres of rabbitbrush scrub. These habitats are native vegetation communities providing suitable habitat for numerous species, potentially including the desert tortoise, MGS, burrowing owl, Le Conte's thrasher, special-status plant species, and nesting birds. However, since no desert tortoises or special-status plants were observed during focused surveys, no direct impacts are expected. Thus, direct impacts could occur to the MGS (377 acres of suitable habitat), nesting birds, and the burrowing owl.

Direct impacts to the MGS, burrowing owl, and nesting bird species would be reduced through implementation of mitigation measures, off-site habitat compensation, and species-specific impact minimization measures for all species impacted.

##### 6.1.1.1.1 Construction Laydown Area

All of this 50-acre area is subject to permanent disturbance. The habitat community present in this area is native rabbitbrush scrub, which provides suitable habitat for numerous species, potentially including the burrowing owl, Le Conte's thrasher, special-status plant species, and nesting birds. However, since no special-status plants were observed during focused surveys, no direct impacts are expected. Thus, direct impacts could occur to nesting birds and the burrowing owl.

Direct impacts to the burrowing owl and nesting bird species would be reduced through implementation of mitigation measures, off-site habitat compensation, and species-specific impact minimization measures for all species impacted.

#### 6.1.1.2 Linear Facilities

##### 6.1.1.2.1 Transmission Line Segment 1

Earth-moving activities within the immediate footprint of the transmission line segment 1 would result in the excavation and removal of topography and topsoil on approximately 7.8 acres of land supporting Mojave creosote bush scrub (3.24 acres), desert saltbush scrub (2.55 acres), Joshua tree woodland (0.25 acre), rabbitbrush scrub (0.16 acre), and Mojave Desert wash scrub (0.03 acre). In addition, agricultural lands (1.32 acres) and urban and disturbed/developed areas (0.25 acre) are crossed by the route.

The 7.8 acres of native vegetation communities provide suitable habitat for numerous species, potentially including the desert tortoise, MGS, burrowing owl, Le Conte's thrasher, special-status plant species, and nesting birds. However, since no desert tortoises or special-status plants were observed during focused surveys, no direct impacts are expected. Thus, direct impacts could occur to the MGS (6.2 acres of suitable habitat), nesting birds, and the burrowing owl.

Direct impacts to the MGS, burrowing owl, and nesting bird species would be reduced through implementation of mitigation measures, off-site habitat compensation, and species-specific impact minimization measures for all species impacted.

#### 6.1.1.2.2 Transmission Line Segment 2

Earth-moving activities within the immediate footprint of the transmission line segment 1 would result in the excavation and removal of topography and topsoil on approximately 0.78 acre of land supporting Mojave creosote bush scrub (0.23 acre), Joshua tree woodland (0.03 acre), Mojavean juniper scrub (0.51 acre), and Mojave Desert wash scrub (0.01 acre).

The 0.78 acres of native vegetation communities provide suitable habitat for numerous species, potentially including the desert tortoise, MGS, burrowing owl, Le Conte's thrasher, special-status plant species, and nesting birds. However, since no desert tortoises or special-status plants were observed during focused surveys, no direct impacts are expected. Thus, direct impacts could occur to the MGS (0.26 acre of suitable habitat), nesting birds, and the burrowing owl.

Direct impacts to the MGS, burrowing owl, and nesting bird species would be reduced through implementation of mitigation measures, off-site habitat compensation, and species-specific impact minimization measures for all species impacted.

#### 6.1.1.2.3 Reclaimed Water Pipeline

No direct impacts are expected since the reclaimed water pipeline will be using existing city street ROWs.

#### 6.1.1.2.4 Natural Gas Supply Pipeline

No direct impacts are expected since the natural gas supply pipeline will be using existing city street ROWs.

#### 6.1.1.2.5 Sanitary Wastewater Pipeline

No direct impacts are expected since the sanitary wastewater pipeline will be using existing city street ROWs.

### 6.1.2 Temporary Impacts

Because desert habitats take a very long time to regenerate, all impacts associated with the Project are considered to be permanent.

### 6.1.3 Jurisdictional Waters

The Project as designed will avoid all state and federal jurisdictional waters. Should the Project require deposition of fill material into any of the federal jurisdictional waterways

**Comment [S26]:** Recommended consultation with DFG streambed unit to confirm this statement.

identified in the Preliminary Determination (Attachment 3), the Project proponent would request confirmation from the USACE of this preliminary assessment of jurisdictional waters by requesting an Approved Jurisdictional Determination from the Los Angeles District of the USACE.

If it is determined that the Project cannot avoid impacts to jurisdictional WSC, a Streambed Alteration Agreement would be required. This would entail the submission of an application to the CDFG for proposed impacts to WSC. The CDFG will determine if an Agreement is required based on proposed impacts and supply that agreement outlining minimization and mitigation measures to be followed by the applicant during construction. RWQCB would most likely regulate state water quality requirements through a Construction General Permit.

**Comment [S27]:** Contradicts "will avoid" statement above.

### 6.1.4 Habitat Communities

#### 6.1.4.1 Mojave Creosote Bush Scrub

Project development would result in the direct loss of approximately **97.47 acres** of Mojave creosote bush scrub. Approximately 94 acres would be permanently impacted as a result of surface-disturbing activities proposed within the power plant site, and approximately 3.47 acres would be permanently impacted as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.2 Joshua Tree Woodland

Project development would result in the direct loss of approximately **189.28 acres** of Joshua tree woodland. Approximately 189 acres would be permanently impacted as a result of surface-disturbing activities proposed within the power plant site, and approximately 0.28 acre would be permanently impacted as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.3 Desert Saltbush Scrub

Project development would result in the direct loss of approximately **2.55** acres of desert saltbush scrub as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.4 Rabbitbrush Scrub

Project development would result in the direct loss of approximately **144.16** acres of rabbitbrush scrub. Approximately 94 acres would be permanently impacted as a result of surface-disturbing activities proposed within the power plant site, approximately 50 acres would be permanently impacted as a result of surface-disturbing activities proposed within the construction laydown area, and approximately 0.16 acre would be permanently impacted as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.5 Mojavean Juniper Woodland and Scrub

Project development would result in the direct loss of approximately **0.51 acre** of Mojavean juniper woodland and scrub as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.6 Mojave Riparian Forest

Project development would not result in the direct loss of Mojave riparian forest since Project activities in areas containing this **habitat will avoid the habitat**.

#### 6.1.4.7 Mojave Desert Wash Scrub

Project development would result in the direct loss of **0.04 acre** of Mojave Desert wash scrub as a result of surface-disturbing activities proposed within the transmission line. Impacts shall be minimized by spanning these areas and keeping the disturbance footprint as small as possible.

#### 6.1.4.8 Agricultural Land and Deciduous Orchards

Project development would result in the direct loss of approximately **1.32** acres of agricultural land as a result of surface-disturbing activities proposed within the transmission line.

#### 6.1.4.9 Urban or Built-Up Land and Disturbed/Developed Land

Project development would result in the direct loss of approximately 0.25 acre of urban or built-up and disturbed/developed land as a result of surface-disturbing activities proposed within the transmission line.

### 6.1.5 General Wildlife

On-site 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 within the affected habitats would be disrupted as a result of permanent and temporary surface disturbance and human work activity presence associated with the Project. The most likely areas that such corridors are expected include on-site 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 includes, but is not limited to, the larger predatory species such as the coyote and kit fox.

Adjacent non-impacted lands provide viable alternative animal movement habitat for the affected species. Wildlife using the on-site 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 on-site washes and drainages, which serve as likely wildlife

movement corridors. For this reason and because of the availability of adjacent lands for alternative wildlife movement and in addition to mitigation measures required for other impacts (*i.e.* off-site habitat compensation, habitat restoration), direct impacts to general wildlife and animal movement corridors are considered to be less than significant.

#### 6.1.5.1 Nesting and Migratory Birds

Birds nesting within the Project site during construction activities could 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, loggerhead shrike, and Le Conte's thrasher. This impact would be considered significant if not avoided or mitigated. Mitigation measures outlined in Section 7.5.1, including nesting bird clearance surveys during the nesting season and biological monitoring, would be implemented to minimize impacts to nesting birds. 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 (*e.g.* 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.

Electrocution of large birds-of-prey by transmission lines has also been well documented. 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 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* (Avian Power Line Interaction Committee [APLIC] 2006) would reduce potential impacts.

### 6.1.6 Special-Status Biological Resources

#### 6.1.6.1 Plant Species

No federally or state-listed annual plant species are known to occur in proximity to the Project site. However, 17 annual plant species recognized by the CNPS as List 1B or 2 species or designated BLM sensitive are known from the vicinity. None of these species was detected during focused surveys conducted on the Project site. Although germination of these species might be greater in a year of higher rainfall, yielding different information on the presence of these species, it is currently assumed that impacts (if any) to these species are not expected to be significant.

**Comment [S28]:** DFG recommends implementing the below bird avoidance measures

Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA).

b. Proposed project activities (including disturbances to native and non-native vegetation, structures and substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).

c. If avoidance of the breeding bird season is not feasible, the Department recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/construction disturbance activities within 300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monit ... [2]

**Comment [S29]:** The Department supports post-construction monitoring of transmission and distribution lines for the purposes of 1) detection of high electrocution or collision risk line segments or poles, 2) assessing the efficacy of installed diverters, perch guards, and other preventative facility measures, and 3) establishing baseline collision and electrocution impact information to inform adaptive management for further reducing impacts and risks.

Additionally, Joshua trees, California junipers, and two species of native cacti (golden 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, they are regulated and managed as species requiring special protection measures and/or permits for impacts by the California NPPA and the City of Palmdale Native Desert Vegetation Ordinance (Ord. 952 §2 [part], 1992). These species would be lost as a result of Project activities throughout various areas of the site, particularly on the power plant site, the adjacent construction laydown area, and possibly along the linear facilities, as they are present throughout all areas of the site. Direct impacts to these species from the proposed Project would be considered significant if not avoided or mitigated. The mitigation measures outlined in Section 7.6.1 (salvaging impacted species, relocating them to local adoption programs or transplanting them into facility landscape design plans, and/or implementing site restoration) would reduce these impacts.

**Comment [S30]:** The conclusion made in the report on adequacy of this mitigation measure should be substantiated. See statement above for Joshua Tree mitigation and impacts. The proposed measure is inadequate and will open the project to much public and agency criticism.

#### 6.1.6.2 Wildlife Species

Implementation of the Project would impact a variety of sensitive wildlife species to varying degrees. Special-status species potentially affected by the Project include desert tortoise, coast (San Diego) horned lizard, coast (California) horned lizard, Cooper's hawk, burrowing owl, ferruginous hawk, Swainson's hawk, Vaux's swift, mountain plover, prairie falcon, loggerhead shrike, Le Conte's thrasher, bats, pallid San Diego pocket mouse, southern grasshopper mouse, MGS, and American badger. These anticipated impacts to special-status wildlife are summarized separately below.

##### 6.1.6.2.1 Desert Tortoise

It is highly unlikely desert tortoises are present on the power plant site. Based on discussions with Dr. Alice Karl, a well-known desert tortoise expert, there is a low chance desert tortoises are present along the north-south portion of transmission line segment 1 and the southeast portion of transmission line segment 2 (Karl 2008). Therefore, mitigation measures would be implemented along the north-south portion of transmission line segment 1 and the southeast portion of transmission line segment 2.

**Comment [S31]:** Consult with USFW. Surveys valid for one year. Restrictive fencing needed unless surveys repeated on annual basis. Ask USFW for further measures to discourage ravens on the site.

##### 6.1.6.2.2 Coast (San Diego and California) Horned Lizards

Development of the linear facilities has the potential to directly impact the coast (San Diego and California) horned lizards. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including avoiding impacts to on-site washes and biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.2 below.

##### 6.1.6.2.3 Cooper's Hawk, Ferruginous Hawk, Swainson's Hawk, Prairie Falcon, Vaux's Swift, Mountain Plover

Development of the Project has the potential to directly impact these migratory/foraging bird species. Vegetation removal and human activity associated with implementation of the

proposed Project would directly impact these species by removing foraging habitat and displacing foraging birds to neighboring lands. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.2 below.

#### 6.1.6.2.4 Burrowing Owl

One live burrowing owl was observed outside of the 500-foot buffer zone during the biological field studies. Additionally, indications of past burrowing owl use (*i.e.* burrows exhibiting whitewash, pellets, discussions with landowners, etc.) were observed within various areas of the Project footprint. Thus, direct impacts to this species as a result of Project activities are possible. Therefore, direct impacts to this species are considered significant. Mitigation measures, outlined in Section 7.6.2, would be implemented to reduce the impacts. These mitigation measures would include a focused nesting season burrowing owl survey conducted within 1 year prior to construction 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 would be implemented for all burrowing owls detected at any time prior to facility installation.

#### 6.1.6.2.5 Loggerhead Shrike, Le Conte's Thrasher

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. A detailed description of these measures is provided in Section 7.6.2 below.

#### 6.1.6.2.6 Bats

Development of the Project has the potential to directly impact migratory/foraging bat species. Vegetation removal and human activity associated with implementation of the proposed Project would directly impact these species by displacing foraging bats to neighboring lands. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.2 below.

6.1.6.2.7 Pallid San Diego Pocket Mouse, Southern Grasshopper Mouse

Development of the Project has the potential to directly impact these species. Vegetation removal and human activity associated with implementation of the proposed Project would directly impact these species by displacing individuals to neighboring lands. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.2 below.

6.1.6.2.8 Mohave Ground Squirrel

The Project applicant has elected to assume presence of MGS within all potentially suitable habitat affected by the Project and consult with the CDFG regarding Project-related impacts. Direct impacts as a result of Project activities therefore are assumed for approximately 383.5 acres of MGS potential habitat. Direct impacts to this species are considered significant if not avoided or mitigated. Mitigation measures, outlined in Section 7.6.2 and Attachment 2 would be implemented to reduce the impacts. Additionally, incidental take authorization would be obtained through the CEC permit process to satisfy CESA requirements.

6.1.6.2.9 American Badger

Development of the Project has the potential to directly impact the American badger. Vegetation removal and human activity associated with implementation of the proposed Project would directly impact this species by displacing individuals to neighboring lands. Direct impacts to this species would be considered significant if not avoided or mitigated. However, mitigation measures, including biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.2 below.

### 6.1.6.3 Significant Ecological Areas

The transmission line will span Little Rock Wash twice; the tie-in to the Vincent Substation will enter Kentucky Springs. Activities within the SEA boundaries will be limited, but human activity associated with implementation of the proposed Project would directly impact species utilizing the SEA by displacing individuals to neighboring lands. Direct impacts to these species would be considered significant if not avoided or mitigated. However, mitigation measures, including biological monitoring, would be implemented to reduce potential impacts. These measures are summarized in Section 7.6.3 below.

## 6.2 Indirect Impacts

Variable levels of indirect impact are anticipated as the result of implementing the proposed Project. 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 off-site natural resources, including habitat used by listed

or special-status species. 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 off-site plants
- The introduction of exotic or invasive plants or animals

### 6.2.1 Permanent Impacts

Permanent indirect impacts associated with routine operations of the Project are anticipated as a result of the Project. These would include those impacts resulting from increased permanent noise, light, and human presence activities, which could result in an increased presence of common ravens and other predators attracted to the Project site.

### 6.2.2 Temporary Impacts

Construction activities have the potential to result in temporary indirect impacts in a variety of ways. In general, initial Project construction activities would result in temporary reduction of wildlife use on adjacent lands as a result of human presence, and construction dust, lighting, and noise. Wildlife use would be expected to return to pre-construction rates following the completion of construction activities.

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.

### 6.2.3 Jurisdictional Waters

The Project as proposed will avoid all impacts to federal and state jurisdictional waters. Potential adverse impacts to adjacent jurisdictional areas will be avoided by appropriate design of on-site precipitation drainage, storm-water, and miscellaneous fluid discharge to reduce this potential indirect impact.

### 6.2.4 Vegetation

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. 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. The introduction of exotic and/or invasive species can likewise degrade off-site habitats, alter wildlife behavior patterns, and/or result in animal displacement, injury, or mortality in affected areas. Surface drainage changes can alter the extent and health of native plant communities.

Appropriate mitigation measures, as discussed in Section 7.4, would reduce these potential indirect impacts.

### 6.2.5 General Wildlife

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. Increases in noise can disrupt the normal behavior patterns of wildlife, sometimes resulting in displacement of these animals. 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 off-site plants and animals, can similarly be affected.

Appropriate mitigation measures, as discussed in Section 7.5, would reduce these potential indirect impacts.

#### 6.2.5.1 Migratory and Nesting Birds

Indirect impacts to nesting bird species may occur as a result of Project-related activities located in close proximity to nesting birds. For this reason, to avoid the potential to impact nesting birds, impact avoidance measures have been developed (see Section 7.5.1). These include establishing buffers around active nests and/or conducting construction activities outside the breeding season (breeding season is typically February 1 through August 31). Additionally, biological monitoring during construction in these areas would further ensure that impacts do not result.

### 6.2.6 Special-Status Biological Resources

Adjacent areas are potentially occupied by the desert tortoise, burrowing owl, MGS, as well as other special-status species such as Le Conte's thrasher and loggerhead shrike.

Indirect impacts to these species may result from a variety of Project-related factors, should the species be present in adjacent areas. Various Project features could serve as barriers, or function to inhibit/reduce movement, potentially fragmenting populations.

Fugitive dust generated by Project construction has the potential to decrease off-site germination of annual plant species, which play vital roles in their life histories (*e.g.* diets, nesting, etc.).

Additional nesting, perching, and shade opportunities would be created for the common raven and other scavenging species. Human presence associated with Project operations, in addition to any trash/garbage generated by Project-related activities, would likely attract scavengers to the area as well.

Additional roads and increased traffic created by the Project would result in an increased potential for injury and/or mortality associated with vehicle travel, illegal collection, as well as possibly improve the ability of some predators to secure prey. Other human actions possibly detrimental, such as garbage dumping and an increased chance of wildfire creation, could be created with the addition of roads in its habitat.

All of these indirect impacts are considered significant if not avoided or mitigated. Mitigation measures including off-site habitat compensation and species-specific impact minimization measures for all species impacted will be implemented. A detailed discussion of these mitigation measures is provided in Section 7.6.2 below.

## 6.3 Cumulative Impacts

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. These incremental impacts, or 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

- 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.

The Project will contribute to the ongoing conversion of land areas from undeveloped to developed and thus reduce the amount of available habitat for plant and wildlife species. The 377-acre power plant site will be developed, resulting in the loss of habitat. However, this parcel of land is highly fragmented, with Avenue M (4 lanes) to the north, Air Force Plant 42 chain-link fencing to the south and east, and railroad tracks and Sierra Highway (4 lanes) to the west. The linear facilities will utilize existing ROWs (*e.g.* City streets, SCE transmission corridors).

Because of the high levels of human activity in the area, further habitat loss, degradation and fragmentation are considered significant issues in the western Mojave Desert (BLM 2006). However, given the current disturbed and degraded nature of the Project site, development of this area is not likely to further reduce the quality of usable habitat for special-status species such as MGS and burrowing owl. The loss of habitat for potentially occurring special-status species will be mitigated by the requirement for the Project to acquire and

permanently protect suitable habitat for these species off site. Providing compensation in the form of permanently protected off-site mitigation acreage, combined with other general mitigation measures described in Section 7.0, 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.

# 7.0 PROPOSED MITIGATION

## 7.1 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 PHPP to a less than significant level. As such, this mitigation is considered an integral component of the proposed Project. Additional mitigation measures and/or impact minimization conditions may also be identified through the course of subsequent Project approval processes.

## 7.2 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 delineated by construction fencing and signs. Environmentally sensitive areas would be flagged or marked with signs.

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 site 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 equipment brought to the site would be power-washed prior to arrival to minimize the transfer of exotic weed seed. No equipment would travel through a weed-infested area en route to the Project.

7) All personnel working during the construction, operation, or maintenance of the proposed Project would be required to attend Environmental Awareness and Project Approval Compliance Training. This would be presented by a qualified biologist familiar with rare plants, desert tortoise, MGS, burrowing owl, and other special-status species with potential to occur within the Project site.

## 7.3 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 off-site habitat compensation and impact minimization measures would be required, as outlined below.

### 7.3.1 Off-Site 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 permanent protection of this resource.

An implementation agreement with a mitigation banking and land management entity 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.

### 7.3.2 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, would be obeyed. These laws include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and CWA.

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.

## 7.4 Vegetation

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 power plant site construction and the need for the adjacent 50 acres of construction laydown area, this area would be revegetated and restored. Additionally, upon completion of construction of the new transmission line poles, stringing of new lines, and the installation of the Project pipelines, the disturbed areas 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.** This technique involves the horizontal/vertical planting of whole shrub skeletons within the disturbance footprint areas proposed for revegetation. The purpose of vertical mulching is two-fold. First, it discourages site use by recreational vehicles. Second, it provides a potential microclimate (*e.g.* shade, lower ambient temperatures) for the germination and growth of plants and provides vertical structure for the accumulation of soil and seeds. 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, construction laydown area, and linear facilities and used in subsequent final site reclamation work in combination with the vertical mulching revegetation technique.

2) **Raking tracks.** This 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.

3) **Imprinting.** This 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 has 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 naturally blown seeds to germinate. The uneven surface created by imprinting in combination with vertical mulching, 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.

4) **Transplantation of salvaged Joshua trees and cacti.** 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-

**Comment [S32]:** See comments above regarding JTree mitigation. State how proposed impacts will mitigate for JT woodland vegetative community and acres of JT woodland that will be avoided, created or enhanced. Needs MMRP and success criteria. JT woodland mitigation should include large off site land acquisition component if on site avoidance not feasible.

approved location. Upon completion of site disturbance, transplantation of the salvaged plants would take place.

5) **Hand broadcasting of native seed from locally collected seed stock.** This 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 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 to 10 years) following Project completion to document progress and provide additional recommendation to achieve the restoration goals (usually a specified percent cover of native species) of the overseeing agency.

## 7.5 General Wildlife

### 7.5.1 Nesting and Migratory Bird Species

To comply with the MBTA, any vegetation removal or grading occurring during the nesting season of bird species (generally February 1 through August 31) potentially nesting on the Project (including special-status species) 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 (*e.g.* buffers) would be required.

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.

## 7.6 Special-Status Biological Resources

### 7.6.1 Plant Species

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.

#### 7.6.1.1 Joshua Trees, California Junipers, and All Native Cacti

In accordance with the CDNPA and the City of Palmdale Native Desert Vegetation Ordinance (Ord. 952 §2 [part], 1992), permits and authorization to remove, transport, or otherwise impact Joshua trees, California junipers, and/or cacti will be obtained prior to Project approval. These species will be relocated to pre-determined, agency-approved locations, made available to a local adoption program, 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.

**Comment [S33]:** These provisions rarely if ever have resulted in conservation of functional native desert vegetation, only preservation of individual plants in fragmented urban landscapes. See above comments on recommended mitigation measures.

### 7.6.2 Wildlife Species

#### 7.6.2.1 Desert Tortoise

Since no desert tortoise or sign were observed on the Project site, and the Project site is highly fragmented, it is highly unlikely desert tortoise are present. However, the following minimization measures should be implemented to ensure any potential impacts to the desert tortoise are avoided, specifically along the north-south portion of transmission line segment 1 and the southeast portion of transmission line segment 2.

**Comment [S34]:** Tortoise surveys are valid for only one year. This should be stated here and if all project grubbing will take place before the year is up or if not will the site be resurveyed? Also discuss tortoise fencing. If tortoise come onto project site during construction or during operation will take occur? Site USFW recommendations.

1) A Worker's Environmental Awareness Program (WEAP) would be implemented to educate the construction crew of potential special-status species present on the Project site.

2) Construction and maintenance personnel 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.

3) Where applicable, clearance surveys will be conducted for desert tortoise immediately prior to surface disturbance.

4) The Authorized Biologist would be on site during the periods when desert tortoises are expected to be active, to ensure construction activities are in compliance and to ensure that any desert tortoises wandering onto the construction site would not be inadvertently harmed.

5) 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.

6) Desert tortoises would be handled according to USFWS-approved protocol (Desert Tortoise Council 1999).

7) All burrows found during clearance surveys (conducted immediately preceding construction activities and with equipment), whether occupied or vacant, would be excavated by the Authorized Biologist and collapsed or blocked to prevent desert tortoise re-entry.

8) 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 or after the animal had moved to a safe area on its own.

**Comment [S35]:** This is considered take. Would require a state incidental take permit or state concurrence with USFW permit.

9) 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, the Authorized Biologist or environmental monitor may capture the desert tortoise and move it out of harm's way.

10) Upon locating or receiving a report of a dead/injured tortoise in the Project site, the FCR or appointed agent would be required to immediately notify the local CDFG and USFWS representatives.

11) Any common raven nesting incidence encountered during construction, operation, or maintenance of the Project would be documented in a periodic report 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.

#### 7.6.2.2 Coast (San Diego and California) Horned Lizards

**Comment [S36]:** State acreage of habitat will be left following construction. Will it be fragmented and subject to edge effects. Will this truly mitigate for loss of habitat? How? This will remain a sig. impact unless off site preservation of land or avoidance is employed. This goes for general wildlife impacts and all special status species.

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 accompany equipment to ensure that the coast horned lizards are not impacted. Individual coast horned lizards found within the Project site would be relocated to off-site 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.

#### 7.6.2.3 Burrowing Owl

Biological surveys in 2008 resulted in documentation of the occurrence of the burrowing owl within one area of the transmission line corridor. Specifically, 1 live owl was observed

approximately 1,200 feet from the ROW. Furthermore, evidence of the past presence of this California-protected raptor within the 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 and pellets in association with on-site burrows) indicative of previous 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 site. For these reasons, off-site habitat compensation for species' habitat impacts and specific impact minimization measures would be required. These measures are outlined below.

To ensure no burrowing owls have established territories on site between initial surveys and receipt of all Project approvals, preconstruction surveys of suitable habitat at the Project site and within 250 feet of the Project site boundary would be conducted within a 30-day period prior to construction. If burrowing owls are identified on site, all mitigation measures identified herein would be applied prior to surface disturbance taking place.

#### 7.6.2.3.1 Off-Site 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.

**Comment [S37]:** This is a minimum designed as a construction buffer. Actual foraging areas should be determined and mitigated at the recommend ratio in the protocol referenced. All off site mitigation should occur within the Antelope Valley to avoid extirpation of burrowing owl from this portion of the range.

An implementation agreement with a regional mitigation banking and land management entity 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 6.5 acres of compensatory habitat would be required per pair of burrowing owls present on the Project site, 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.

#### 7.6.2.3.2 Habitat Restoration

All burrowing owl habitats temporarily disturbed through Project activities would be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above.

7.6.2.3.3 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: (a) the birds have not begun egg-laying and incubation; or (b) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

2) A buffer zone of 250 feet 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 1 or more weeks would be necessary to accomplish this and allow the birds to acclimate to alternate burrows.

The Project would provide funding for permanent management and monitoring of the protected lands acquired for burrowing owl impacts. This monitoring would include an annual report submittal to the CDFG.

### 7.6.2.4 Bats

A biological monitor familiar with these species would be present for all activities involving operation of heavy equipment or ground disturbance in areas potentially suitable for bats. Any potential roosts or hibernacula would be avoided. The biological monitor would conduct daily surveys along the ROW and vicinity to further ensure that these species are not impacted.

### 7.6.2.5 Pallid San Diego Pocket Mouse and Southern Grasshopper Mouse

A biological monitor familiar with these species would be present for all activities involving operation of heavy equipment or ground disturbance in areas potentially suitable for these species. The biological monitor would accompany equipment to help ensure that these species are not impacted (difficult however, since these mice are nocturnal and subterranean). Individuals found within the Project site would be relocated to off-site areas away from harm. Upon completion of Project activities, all temporarily disturbed areas would be revegetated and restored.

**Comment [S38]:** Try trapping prior to grubbing. Also grubbing and grading should be done in a manner that will push mobile wildlife off onto adjacent habitat and not create islands of habitat where wildlife will seek refuge only to be killed by equipment later.
A biological monitor should be on site to salvage species of low mobility. Records of salvage and mortality should be kept for DFG inspection.

### 7.6.2.6 Mohave Ground Squirrel

The Project applicant has elected to assume presence of this species on the power plant site and along portions of the transmission line, and to satisfy incidental take authorization requirements under CESA §2081 for assumed impacts to this species. Associated off-site

**Comment [S39]:** Assumed presence would require an incidental take permit from the Department and so should be clearly stated here unless otherwise clearly noted

habitat compensation measures and specific impact minimization measures are outlined below, and set forth by Leitner (2008) in Attachment 2.

#### 7.6.2.6.1 Off-Site Habitat Compensation

Direct and indirect impacts to MGS habitat will be compensated with the acquisition of suitable MGS habitat. The amount and location of the compensation lands will be determined in negotiations with, and approved by CDFG. Leitner (2008) suggests a 2:1 ratio for the power plant site (377 acres), and a 3:1 ratio for the transmission line portions (6.5 acres). An implementation agreement with a mitigation banking and land management entity would be secured to acquire the compensation habitat, initially enhance, and manage it over the long term for the benefit of the MGS.

#### 7.6.2.6.2 Habitat Restoration

All MGS habitats temporarily disturbed through Project activities would be revegetated and restored in accordance with the Habitat Restoration mitigation measures detailed in the General Mitigation section above.

#### 7.6.2.6.3 Specific Impact Minimization Measures

1) Before initiating ground-disturbing activities, the FCR 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, the Authorized Biologist knowledgeable and experienced in the biology and natural history of the MGS would be designated to monitor construction activities in areas of MGS habitat to help avoid the take of individual animals and to minimize habitat disturbance. The CDFG would be notified in writing prior to commencement of ground-disturbing activities of the Authorized Biologist's name, business address, and telephone number. The Authorized Biologist would be subject to the approval by the CDFG.

3) 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 MGS, 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 on site. Upon completion of the orientation, employees would sign a form stating that they attended the program and understand all protection measures.

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 31 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: (a) a general description of the status of the Project, including actual or projected completion dates, if known; (b) a table with notes showing the current implementation status of each mitigation measure; and (c) 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 MGS and their sign during Project activities would be conveyed to the Authorized Biologist. This information would be included in monthly compliance reports to the CDFG.

10) The Authorized 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 MGS.

11) Work personnel would access the Project site using existing routes and would not cross MGS habitat outside of the Project site. To the extent possible, previously disturbed areas within the Project site would be used for temporary storage areas, material laydown sites, and any other surface-disturbing activities. If construction of off-site 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 off-site.

13) All Project-related parking and equipment storage would be confined to the Project site. Off-site MGS 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 MGS habitat. Vehicle speeds would not exceed 15 mph to avoid MGS potentially on roads or traveling through the Project site.

14) If a MGS 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 MGS would only be relocated by a qualified biologist to a relocation burrow prepared according to CDFG guidelines.

15) If a MGS 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 MGS 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 MGS was killed by Project-related activities during construction, or if a MGS 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 and/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 Authorized Biologist and would include, at a minimum: (a) a table with notes showing when each of the incidental take permit mitigation measures was implemented; (b) all available information about Project-related incidental take of species named in the incidental take permit; (c) information about other Project impacts on the MGS; (d) construction dates; (e) an assessment of the effectiveness of each mitigation measure in minimizing Project impacts; and (f) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the MGS.

#### 7.6.2.7 American Badger

A biological monitor familiar with this species would be present for all activities involving operation of heavy equipment or ground disturbance in areas potentially suitable for this species. The biological monitor would conduct daily clearance surveys along the ROW and vicinity to further ensure that this species is not impacted. Individuals found within the Project site would be allowed to move away on its own. Project activities would cease until the individual was out of harm's way. Upon completion of Project activities, all temporarily disturbed areas would be revegetated and restored.

### 7.6.3 Significant Ecological Areas

The Los Angeles County General Plan Technical Appendix (2007) provides guidelines for each SEA. These guidelines should be taken into consideration by the Project applicant prior to beginning the Project design.

#### 7.6.3.1 Antelope Valley SEA

The Antelope Valley SEA includes Little Rock Wash, Big Rock Wash, Alpine Butte, Lovejoy Butte, Piute Butte, Saddleback Butte State Park, EAFB, and Rosamond Lake. Specific considerations include:

- Retain habitat linkages within Little Rock and Big Rock Washes as well as the desert-montane transect.

- Limit new development to outside the existing floodplain margins (as identified from biological, hydrological, and geological evidence, along with Federal Emergency Management Agency assessments), to obviate the necessity for further bank stabilization, protect life and property, and allow groundwater recharge.

- Maintain the habitat of core populations of listed species including the federally endangered southwestern arroyo toad, federally threatened California desert tortoise, state-threatened MGS, and alkali mariposa lily as well as adequate buffers to eliminate or minimize adverse impacts.

- Retain rare communities with adequate buffers to allow for the long-term viability and integrity of plant communities as a whole. Rare communities include: mesquite bosque, Joshua tree woodland, desert grassland, southern willow scrub, cottonwood-willow woodland, fresh-water marsh, alkali marsh, Mojave riparian forest, desert alluvial fan scrub, and desert alluvial wash.

- Carefully review proposals for new or increased groundwater extraction to prevent overdrafting of the shallow aquifer supporting the dry lakes and riparian habitat areas. The biological functionality of these areas is directly related to the supporting hydrology which originates from the surrounding basin slopes and from the groundwater flows of Little Rock and Big Rock Creeks.

#### 7.6.3.2 San Andreas Rift Zone SEA

The San Andreas Rift Zone SEA includes Ritter Ridge. Specific considerations include:

- Retain rare communities with adequate buffers to allow for the long-term viability and integrity of plant communities as a whole. Rare communities include: Joshua tree woodland, valley oak woodland, native grassland, wildflower field, southern cotton-wood-willow riparian forest, fresh-water marsh, alkali marsh, alluvial wash, and southern willow scrub.

- Retain broad transition zones between the different habitat types of the Mojave Desert, the San Gabriel Mountains, and the Tehachapi Mountains in such a way as to allow for free movement of a unique mix of species (plants and less-mobile wildlife). This will occur if connected blocks of open space remain intact.

#### 7.6.3.3 Santa Clara River SEA

The Santa Clara River SEA includes Kentucky Springs and Santa Clara River. Specific considerations include:

- Limit new development to outside the existing floodplain margins (as identified from biological, hydrological, and geological evidence, along with Federal Emergency Management Agency assessments), to obviate the necessity for further bank stabilization and protect life and property.

- Maintain the habitat of core populations of listed species including the federally endangered unarmored threespined stickleback as well as adequate buffers to eliminate or minimize adverse impacts.

- Retain rare communities with adequate buffers to allow for the long-term viability and integrity of plant communities as a whole. Rare communities include: native grassland, coast live oak riparian forest, southern willow scrub, bigcone spruce-canyon oak forest, southern sycamore-alder woodland, southern cottonwood-willow

riparian woodland and forest, freshwater marsh, alluvial fan sage scrub, and vernal pool.

- Carefully review proposals for new or increased groundwater extraction to prevent overdrafting of the shallow aquifer supporting the riparian habitat areas. The biological functionality of these areas is directly related to the supporting hydrology which originates from the surrounding basin slopes and from the groundwater flows of Santa Clara River.

- Retain connectivity and linkage values of the Santa Clara River and its major tributaries over their entire floodplain, and between the Santa Clara River and the Santa Susana Mountains.

## 8.0 CONCLUSION

General biological surveys and biotic inventories, including focused surveys for special-status plants, the federally listed desert tortoise, and state-protected burrowing owl, were conducted throughout the affected area of the proposed Project and site vicinity (within the planned disturbance footprint, buffer zone, and Zone of Influence). These efforts detected six special-status bird species and other migratory bird species both on and adjacent to the Project site.

Although no desert tortoise critical habitat is present on or near the Project site, the habitats occurring on the Project site (*e.g.* desert scrub, desert wash, and Joshua tree) are habitats typically utilized by desert tortoises. Focused surveys conducted in 2006 on the power plant site did not detect desert tortoise or sign. Focused surveys conducted in 2008 did not detect desert tortoise on the Project site, buffer zone, or ZOI. One potential desert tortoise burrow (Class 5: good condition, undetermined species, but possibly tortoise) was found during surveys on the 3,960-foot ZOI transect west of the power plant site. The mouth of the burrow was overgrown with vegetation, and no sign of recent use was evident.

Suitable burrowing owl habitat was identified on various components of the Project, and 1 burrowing owl was detected 1,200 feet from the transmission line route (outside the 500-foot buffer zone). Focused surveys will be conducted to determine the number of burrowing owls, if any, present on the Project site and buffer zone.

Although focused small mammal trapping in 2006 did not detect any MGS, the Project applicant has elected to assume presence of this state-listed species based on the presence of potentially suitable habitat in the Project site and along portions of the transmission line. Implementation of the proposed Project would result in a permanent loss of 383.5 acres of presumed-occupied MGS habitat.

**Comment [S40]:** This should be stated above in MGS impact section and mitigation section

Appropriate mitigation measures and habitat loss replacement (compensation) programs for impacts resulting from the proposed Project are provided in this report. Satisfaction of requirements for a CESA §2081 incidental take permit for the state-listed MGS would be required for authorization of the proposed Project. Terms and conditions outlined in the "Mitigation and Monitoring Program" (MMRP) included in the CESA 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 Project and together would fully mitigate all anticipated biological resource impacts.

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## 10.0 FIGURES

# ATTACHMENT 1
# QUALIFICATIONS OF INDIVIDUALS CONDUCTING STUDIES

# ATTACHMENT 2
# MOHAVE GROUND SQUIRREL REPORTS

# ATTACHMENT 3
# PRELIMINARY DETERMINATION OF JURISDICTIONAL WATERS OF THE UNITED STATES AND WATERS OF THE STATE OF CALIFORNIA, PHPP

# ATTACHMENT 4
# REPRESENTATIVE SITE PHOTOS
# FOR THE PALMDALE HYBRID POWER PROJECT

# ATTACHMENT 5
# OBSERVED PLANT SPECIES LIST
# FOR THE PALMDALE HYBRID POWER PROJECT

# ATTACHMENT 6
# OBSERVED VERTEBRATE SPECIES LIST
# FOR THE PALMDALE HYBRID POWER PROJECT

# ATTACHMENT 7
# CNDDB REPORT FOR 10-MILE RADIUS AROUND THE PHPP

# ATTACHMENT 8
# DESERT TORTOISE FIELD SURVEY FORMS

**Page 7: [1] Comment [S1]** **SPHARRIS** **9/24/2008 10:54:00 AM**

The Department considers Joshua tree woodlands as a threatened vegetative community. The loss of Joshua tree woodland as the result of the proposed project should be recognized by the lead agency as a local/regional significant impact under CEQA unless mitigated below a significant level.

Native Vegetation Preservation Plans approved by the City of Palmdale do little to avoid and/or mitigate for the continual cumulative loss of functional Joshua tree woodland communities and have not been scientifically evaluated to justify continual reliance as a mitigation measure. Saving two trees per acre on site and/or Digging up Joshua trees and transplanting into isolated and urbanized landscaping areas as endorsed by the City of Palmdale should not be considered appropriate mitigation of loss of Joshua tree woodland vegetative communities as these methods are experimental and there are no assurances of their success.

Joshua tree woodland on the project site should be avoided and preserved in perpetuity from further development. If avoidance of functional Joshua tree woodland is not feasible, off site Joshua tree woodland of equal or superior quality should be acquired at a no less than a 1:1 mitigation ratio within remaining Joshua tree woodland in the Antelope Valley to avoid local extirpation. Acquired habitat should be adjacent to large tracts of existing Joshua tree woodlands which have been identified by resource agencies as having a high priority for acquisition for conservation. All mitigation lands preserved on site or acquired off site should be deeded to a local land conservancy and protected in perpetuity under a conservation easement to prohibit incompatible uses on the site. Digging up Joshua trees and transplanting into other areas as endorsed by the City of Palmdale should not be considered appropriate mitigation of loss of Joshua tree woodland vegetative communities as these methods are experimental and there are no assurances of their success.

Joshua tree woodlands should be avoided and preserved. If avoidance is not feasible efforts should be made to acquire and protect habitat of equal or superior value and/ or acquire and project areas to be restored and/or created which will result in fully functional Joshua tree woodland habitat. Salvaged Joshua trees should be transplanted into preserve areas as described above where restoration/creation and monitoring

which will remove Joshua tree woodland and other desert vegetative communities could be used to acquire preservation, restoration and creation land banks to assure that native desert vegetation communities are truly protected within the Antelope Valley.

**Page 60: [2] Comment [S28] SPHARRIS 9/24/2008 2:24:00 PM**

DFG recommends implementing the below bird avoidance measures

Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA).

b. Proposed project activities (including disturbances to native and non-native vegetation, structures and substrates) should take place outside of the breeding bird season which generally runs from March 1- August 31 (as early as February 1 for raptors) to avoid take (including disturbances which would cause abandonment of active nests containing eggs and/or young). Take means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86).

c. If avoidance of the breeding bird season is not feasible, the Department recommends that beginning thirty days prior to the disturbance of suitable nesting habitat the project proponent should arrange for weekly bird surveys to detect protected native birds occurring in the habitat that is to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors) as access to adjacent areas allows. The surveys should be conducted by a qualified biologist with experience in conducting breeding bird surveys. The surveys should continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, the project proponent should delay all clearance/construction disturbance activities within 300 feet of suitable nesting habitat (within 500 feet for suitable raptor nesting habitat) until August 31. Alternatively, the qualified biologist could continue the surveys in order to locate any nests. If an active nest is located, clearing and construction within 300 feet of the nest (within 500 feet for raptor nests) or as determined by a qualified biological monitor, must be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing marking

record the results of the recommended protective measures described above to document compliance with applicable State and Federal laws pertaining to the protection of native birds.