Biological Survey Report for Southern California Edison Peaker Construction at Mira Loma Substation in Mira Loma, San Bernardino County, California

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December 2006

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Introduction

Southern California Edison (SCE) is proposing to construct a "peaker" southeast of the Mira Loma substation to address the California Public Utility Commission (CPUC) directive requiring SCE to address future electric reliability needs. This peaker will provide necessary grid support during times of prolonged high electricity demand. The purpose of the biological survey was to determine whether the proposed activities have the potential to affect sensitive biological resources.

A biological site assessment was conducted for the Mira Loma Substation Peaker Project on 21 September 2006. The proposed project is located adjacent to the current Mira Loma substation on 13568 Milliken Avenue in Mira Loma (*Figures 1 and 2).* The proposed project is located within U.S. Geological Survey (USGS) 7.5 minute map, Guasti quadrangle: SE ¼ of Section 12 (*Figure 2*); in San Bernardino County, California.

Regulatory Setting

Federal Regulations

Federal Regulation of Waters of the United States, Including Wetlands (Clean Water Act Sections 404 and 401)

The U.S. Army Corps of Engineers (Corps or USACE) and the Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into "*waters of the United States*", including wetlands, under Section 404 of the Clean Water Act (CWA). The USACE has defined the term "wetlands" as follows:

> *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstance do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."*

Some classes of fill activities may be authorized under general permits if specific conditions are met. Projects that would result in the placement of dredged or fill material into waters of the U.S. require a Section 404 permit from the Corps. Utility line construction activities that result in the placement of fill into waters of the U.S. may be authorized under Section 404 Nationwide Permit 12 (at the discretion of the Corps). Nationwide Permit 12 also notes that overhead utility lines constructed over navigable waters of the United States require a Rivers and Harbors Act Section 10 permit. The general definition of navigable waters of the United States includes those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high

water mark, and/or are presently used or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. Nationwide permits do not authorize activities that are likely to jeopardize the existence of a threatened or endangered species (listed or proposed for listing under the federal Endangered Species Act) or that may affect properties listed or eligible for listing in the National Register of Historic Places (56 FR 59134, November 22, 1991). In addition to conditions outlined under each nationwide permit, project-specific conditions may be required by the Corps as part of the Section 404 permitting process.

Section 401 of the CWA requires the issuance of a water quality certification or waiver thereof for all Section 404 nationwide or individual permits issued by the Corps. The EPA has deferred water quality certification authority to the Regional Water Quality Control Board (RWQCB). The federal government also supports a policy of minimizing "*the destruction, loss, or degradation of wetlands*." Executive Order 11990 (May 24, 1977) requires that each federal agency take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

Federal Policies on Riparian Communities in California

Riparian communities have a variety of functions, including providing high-quality habitat for resident and migrant wildlife, stream bank stabilization, and runoff water filtration. Throughout the United States, riparian habitats have declined substantially in extent and quality compared with their historical distribution and condition. These declines have increased concerns about dependent plant and wildlife species, which consequently, has lead federal agencies to adopt policies to arrest further loss. United States Fish and Wildlife Service (USFWS) mitigation policy identifies California's riparian habitats as belonging to resource Category 2, for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981).

Federal Endangered Species Act

The USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries oversee the federal Endangered Species Act (ESA). Sections 9 and 4(d) of the ESA prohibit the "*take*" of any fish or wildlife species listed as endangered or threatened, including the destruction of habitat that could hinder species recovery. The ESA defines take as, "*to harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed animal species, or attempt to engage in such conduct.*" The Section 9 take prohibition of the ESA applies only to wildlife and fish species. Section 9 also prohibits the removal, possession, damage, or destruction of any endangered plant from federal lands. Section 9 further prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant

species in non-federal areas in knowing violation of any state law or in the course of criminal trespass.

Candidate species and species that are proposed for listing receive no protection under the ESA. The USFWS has jurisdiction over plants, wildlife, and resident fish; NOAA Fisheries has jurisdiction over anadromous fish, marine fish, and marine mammals. Section 7 of the Act mandates that all federal agencies consult with the USFWS and/or NOAA Fisheries to ensure that federal agencies' actions do not jeopardize the continued existence of a listed species or adversely modify critical habitat for listed species.
Under Section 10(a)(1)(B) of the ESA, permits to authorize "*incidental take*" of listed species may be issued. "*Incidental take*" is defined by the ESA as take that is incidental to, and not for the purpose of, carrying out an otherwise lawful activity. To obtain a take permit, an applicant must submit a HCP outlining what will be done to minimize and mitigate the impact of the permitted take on the listed species. The underlying principle of Section 10 exemption from the ESA is that some individuals of a species or portions of their habitat may be expendable over the short term, as long as enough protection is provided to ensure the long-term recovery of the species.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) states that without a permit issued by the U.S. Department of the Interior, it is unlawful to pursue, hunt, take, capture, transport, import, or kill any migratory bird. A list of migratory bird species protected by the MBTA appears in 50 CFR 10.13.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (The Eagle Act) amended in 1962, was originally implemented for the protection of bald eagles (*Haliaeetus leucocephalus*). In 1962, Congress amended the Eagle Act to cover golden eagles (*Aquila chrysaetos*), a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof. The golden eagle, however, is accorded somewhat lighter protection under the Eagle Act than the bald eagle (USFWS 2006b).

State Regulations

State Regulation of Waters

The CDFG regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the California Fish and Game Code (CFGC) requires notification of the CDFG for lake or

stream alteration activities. If, after notification is complete, the CDFG determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFG has authority to issue a streambed alteration agreement under Section 1603 of the CFGC. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These may include avoidance or minimization of heavy equipment use within stream zones, limitations on work periods to avoid impacts to wildlife and fisheries resources, and measures to restore degraded sites or compensate for permanent habitat losses.

Storm Water Pollution Prevention Plan

The RWQCB implements water quality regulations under the federal CWA and the State Porter- Cologne Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of storm water runoff associated with construction activity. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

California Endangered Species Act

California implemented its own Endangered Species Act (CESA) in 1984. The state act prohibits the take of state-listed endangered and threatened species; however, habitat destruction is not included in the state's definition of take. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated "*fully protected species*"). Regarding listed rare and endangered plant species, CESA defers to the California Native Plant Protection Act (NPPA) of 1977, which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants which are not regulated under the NPPA. In this case, plants listed as rare or endangered under the NPPA are not protected under CESA but can be protected under the California Environmental Quality Act (CEQA). In addition, plants that are not state-listed but meet the state standards for listing, are also protected under CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Plant*s (CNPS 2006) potentially qualify for protection under CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection under CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection under CEQA. List 4

includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the state standards for listing.

California Fish and Game Code Bird Protections

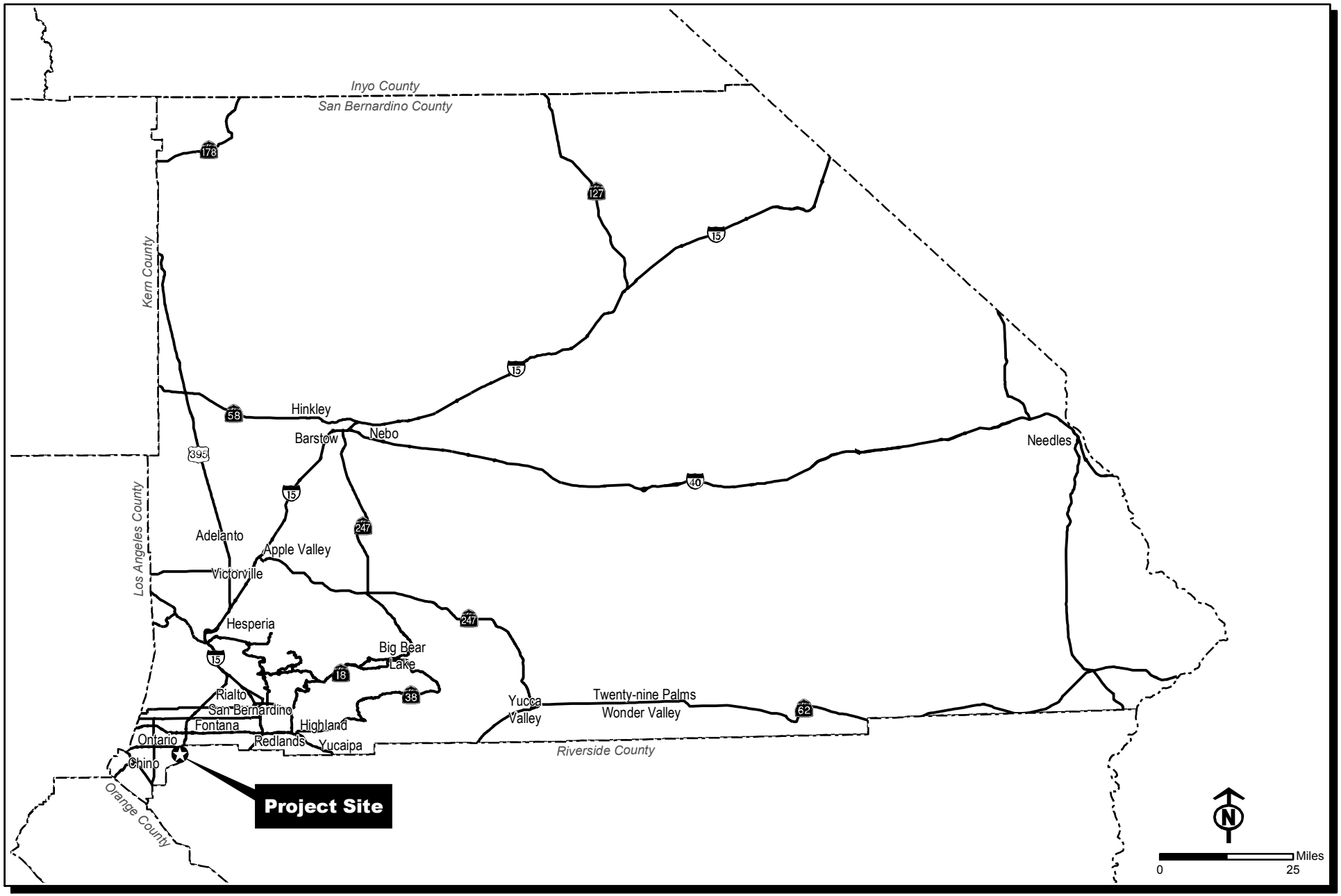
Section 3503 of the CFGC prohibits destruction of the nests or eggs of most native resident and migratory bird species. Section 3503.5 of the CFGC specifically prohibits the taking of raptors or destruction of their nests or eggs.

Project Description

SCE plans to build a peaker (a new small electricity generating unit) adjacent to the Mira Loma substation. The proposed site for the peaker is surrounded by old agricultural fields and extant dairies within an existing transmission line right-of-way. The Mira Loma peaker project location contains an existing substation, vehicles, maintenance and construction equipment, transmission and distribution lines, and permanent buildings. The project is proposed to be located adjacent to the southeastern corner of the existing Mira Loma substation site. Project facilities will be located within an approximate 208 by 308 foot area, as generally depicted on *Figure 3*. The main project facilities will include the GE gas turbine generator, 80-foot tall exhaust stack, continuous emission monitoring system (CEMS), selective catalytic reduction (SCR) and carbon monoxide reduction system enclosure, ammonia storage tank (for SCR injection), gas fuel line, water line, water storage tanks, transmission transformers, 66 kV transmission tap line, and facility control module.

Survey Methods and Limitations

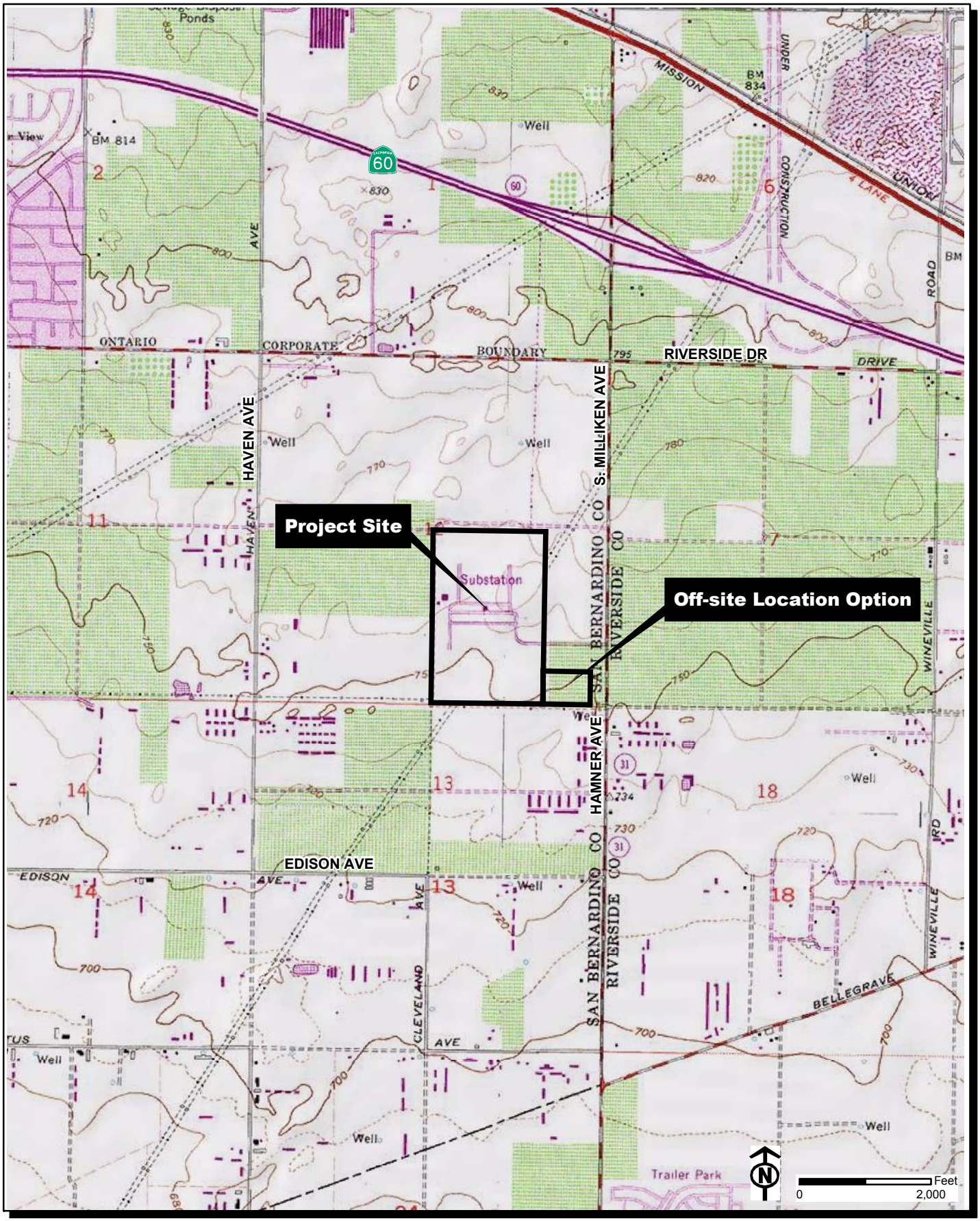
Habitat and land coverages within the proposed project area and adjacent lands were surveyed by Dudek biologist Brock A. Ortega and Jeff W. Kidd of Jeff W. Kidd Biological Consulting on 21 September 2006. Survey conditions were suitable for determining potential environmental issues and viewing wildlife species. The area was methodically surveyed and all resources and potential constraints were identified and inventoried. All plant and wildlife species were identified. Latin and common names for vertebrate species referred to in this report follow Collins (1997), Stebbins (2003) for amphibians and reptiles, Jones, et al., (1992) for mammals and American Ornithologists' Union (AOU) Check-list (2003) for birds. Latin and common names of plants follow *The Jepson Manual* (Hickman, 1993) or more recent published taxonomical revisions of genera. Where not listed in Hickman (1993), common names are taken from Simpson and Rebman (2002) and Roberts (1998). Habitat classification follows Holland (1986).



Southern California Edison Mira Loma Substation Peaker Initiative Project

Regional Map

FIGURE 1

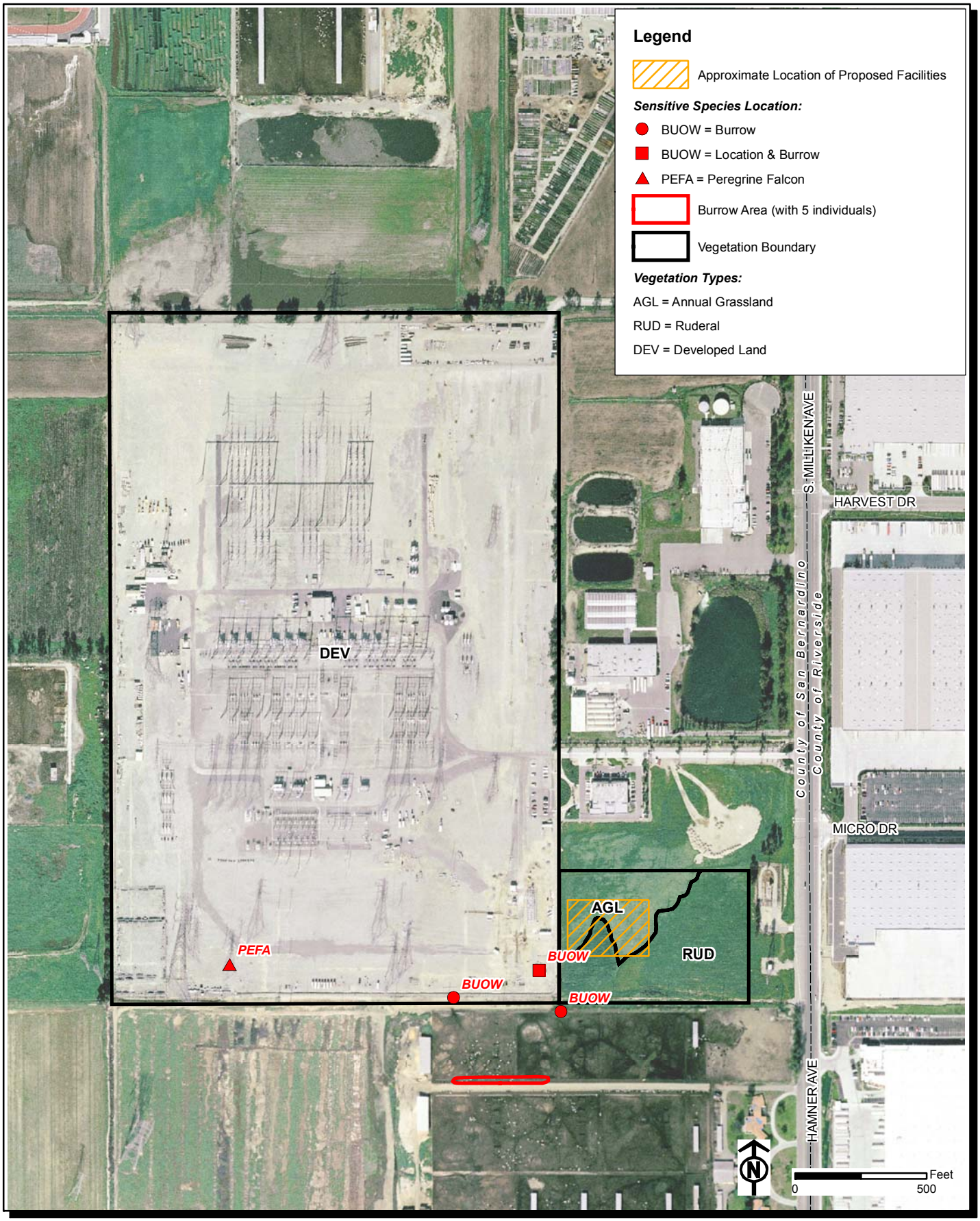


BASE MAP SOURCE: USGS 7.5 Minute Series, Guasti Quadrangle

Southern California Edison Mira Loma Substation Peaker Initiative Project

Vicinity Map

FIGURE 2



BASE MAP SOURCE: Air Photo USA, February 2005

Southern California Edison Mira Loma Substation Peaker Initiative Project

Biological Resources Map

FIGURE 3

Each site was surveyed for habitat and soil conditions which are known to support sensitive plant species. Habitats encountered within the proposed project area were mapped and descriptions of the habitats are listed below (*Figure 3*).

Prior to conducting the field investigation, a review of the existing biological resources and species within the vicinity of the project site was conducted using the California Natural Diversity Data Base (CNDDB) (2006), Southern California Conservation Study (SCCS), U.S. Fish and Wildlife Service information, and federal critical habitat. The purpose of this review was to determine if sensitive plant and wildlife species are known to occur within the project area or in the nearby vicinity of the project area. In addition, a review of focused Delhi Sands flower-loving fly surveys covering the area was provided by Mr. David K. Faulkner.

During the site visit, approximate 10-meter transects were walked across the entire potential project area, potential access points from the Mira Loma Substation, and on the adjacent substation. While walking transects biologists searched generally inventoried biological resources and searched for special status species.

A special effort was made to search for burrowing owls and associated burrow complexes. All burrows encountered were thoroughly searched for owl sign (*i.e.*, pellets, feathers, white wash, insect or rodent remains, and bone fragments). A 120-scale aerial photograph was available to map resources.

Survey Limitations

Surveys were conducted during the late summer-early fall season resulting in detection and identification of most perennial plant species which may potentially occur in the area. Annuals and some cryptic perennials may not have been detectable or were not identifiable to species. Conditions were suitable for detection of wildlife species (i.e., 80-30% cloud cover, 65-89 degrees Fahrenheit, 0-3 mph winds) though the season limited the observations of breeding and summer resident species. However, based on the small size of the project area and disturbed nature of the project area, we are confident in our analysis.

Results: Environmental Setting

Vegetation Communities

The proposed peaker location includes annual grasslands and ruderal habitat. The actual Mira Loma Substation is entirely developed with a gravel base. In addition, the site is

located within Delhi sands which are known to support habitat for the Delhi sands flower loving fly.

Annual Grassland (AGL)

Annual grassland is characterized by introduced annuals and primarily grasses, including, showy sunflower (*Helianthus niveus* ssp. *canescens*), Russian-thistle (*Salsola tragus*), *Avena sp*., and ripgut grass (*Bromus diandrus*). Annual grassland typically occurs adjacent to roads or other developed areas where there has been some historic disturbance, or in areas where disturbance by maintenance (mowing, scraping, discing, spraying, etc.), grazing, repetitive fire, agriculture, or other mechanical disruption have altered soils and removed native seed sources from areas formerly supporting native vegetation. Annual grassland may support sensitive plant and animal species and provide valuable foraging habitat for raptors (birds of prey).

Ruderal (RUD)

Ruderal habitat is similar to non-native annual grassland in that non-native species predominate over natives and native habitat recovery is unlikely, yet differs in the type of non-native species present. Generally, ruderal habitat is characterized by forbs rather than grasses such as *Amaranthus sp*., and annual bur-sage (*Ambrosia acanthicarpa*). Ruderal habitat occurs in areas subjected to a history of severe disturbance.

Soils

Delhi sands are mapped under the proposed project location. Delhi sands is a soil series that is known to support habitat for the federally-listed endangered Delhi sands flower-loving fly. The Delhi series consists of very deep, somewhat excessively drained soils. Delhi soils are on 0 to 15 percent slopes at elevations of 25 to 1,400 feet. They formed in wind modified alluvium derived from granitic rock sources on floodplains, alluvial fans and terraces. The climate is dry subhumid with cool moist winters and hot dry summers. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs.

Hydrological Resources

Although a formal wetland delineation was not conducted for the proposed peaker site, the area was evaluated for the potential to support jurisdictional waters under the federal Clean Water Act, state Fish and Game Code, and state Porter-Cologne Act. No such areas exist on the project location, therefore no permitting is necessary.

Wildlife

Wildlife species observed or detected during the survey at the proposed project location include: European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), song sparrow (*Melospiza melodia*), Cassin's kingbird (*Tyrannus vociferans*), Botta's pocket gopher (*Thomomys bottae*), western pygmy blue (*Brephidium exile*), common hairstreak (*Strymon melinus pudica*), side-blotched lizard (*Uta stansburiana*), cabbage butterfly (*Pieris rapae rapae*) and black phoebe (*Sayornis nigricans*). Species encountered adjacent to the project location on the Mira Loma Substation include: burrowing owl (*Athene cunicularia*), house finch (*Carpodacus mexicanus*), peregrine falcon (*Falco peregrinus*), European starling, mourning dove (*Zenaida macroura*), rock dove, red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), American crow, and California towhee (*Pipilo crissalis*).

Results: Biological Resources, Discussion of Impacts and Mitigation

Sensitive Species Potentially in the Project Area

Table 1: Project Study Area Sensitive Species Table

Scientific Name	Common Name	Status	Specific Habitat Present/ Absent	Species Presence/ Absence	Rationale
Navarretia prostrata	Prostrate navarretia	SSC CNPS 1B	Alkaline soils in grassland or vernal pools.	A	Project site does not contain native habitat to support this species.
Orcuttia californica	California orcutt grass	FE,ST	Vernal pools	A	Center Substation doesn't contain any of the required habitats for this species.

Table 2: Project Study Area Sensitive Species Table (*Cont.*)

Scientific Name	Common Name	Status	Specific Habitat Present/ Absent	Species Presence/ Absence	Rationale
Lasthemia glabrata ssp. *coulteri*	Coulter's goldfields	SSC CNPS 1B	Alkaline soils in playas, sinks, and grasslands	A	Center Substation doesn't contain any of the required habitats for this species.
Phacelia stellaris	Brand's phacelia	FC	Open areas of coastal scrub and coastal dunes	A	Center Substation doesn't contain any of the required habitats for this species.
Raphiomyidas terminatus abdominalis	Delhi sands flower-loving fly	FE	Delhi sands with open habitat containing buckwheat and other native plants	A	Suitable habitat present, but long –term focused surveys have proved absence.
Athene cunicularia	Burrowing owl	SSC	Open grassland and scrub habitats	P	Burrowing owl are present in close proximity of project area though not detected within the proposed project area.

Absent [A] means no further work needed. Present [P] means general habitat is present and species may be present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS), etc.

Special Status Plant Species

No special status plant species will be impacted due to project activies.

Survey Results

Special status plant species were not observed during the plant survey and are not expected to occur within the project site.

Avoidance and Minimization Efforts

Avoidance and minimisation efforts will not be required.

Project Impacts

Since there is no potential for sensitive plant species in the project area there will be no impacts.

Compensatory Mitigation
Compensatory mitigation will not be requried for this project for impacts to sensitive plant species will not occur.

Special Status Wildlife Species Occurrences

Delhi sands, supporting soil for the Delhi sand flower loving fly, is located within the proposed project area. The U.S. Fish and Wildlife Service (USFWS) requires two years of negative protocol level surveys on moderate to suitable habitat. SCE has already conducted protocol surveys for the fly for five consecutive years in conjunction with the Etiwanda-Mira Loma area Reconductor project (Faulkner 2006; *Appendix B*). The surveys conducted for this project include the current proposed project and surrounding areas. Results of these surveys were negative and habitat within the proposed site location is considered degraded and unsuitable.

Within this area, burrowing owl feathers were observed, but owls and burrows were not detected. One suitably-sized burrow without owl sign was located along the northern edge of this area under the power lines. This burrow appeared to be currently occupied by California ground squirrel.

Burrowing owls were observed within the Mira Loma Substation and south of the substation within 500 feet of the proposed project area. Burrowing owls were immediately detected upon investigating the area. Once burrowing owls were detected, the site was completely surveyed for burrowing owl sign using a single-pass method including approximate 10-meter transects. All detected burrows were inspected for burrowing owl sign. A long-term resident individual and possibly pair was detected onsite. An additional burrow was located along the fence. Outside the fence to the southeast another burrow displaying classic burrowing owl sign was detected. This burrow appeared to not have been used recently, based on the disrepair and presence of dense black widow webs. Outside the project area roughly 100 feet to the south (in the old dairy farm) approximately 5 burrowing owls were detected. These appeared to represent a pair and three juveniles. A peregrine falcon was observed on a tower in the southwestern corner of the substation. Based on feather identification, this appeared to be a juvenile falcon and no nests were observed in the area. It is expected that this individual was passing through, using the site to wait for hunting opportunities.

The CNDDB and SCCS data bases were searched for sensitive species potentially occurring on the project site. Based on these databases, there are no other sensitive wildlife or plant species that have a potential to occur within the proposed project areas.

Avoidance and Minimization Efforts
Avoidance and minimization efforts will be required and are noted below under the Avoidance, Minimization, and Mitigation Section.

Project Impacts
There will be significant indirect impacts to burrowing owl as discussed below under Project Impacts.

Compensatory Mitigation
Compensatory mitigation will be required for this project and is discussed below under the Avoidance, Minimization, and Mitigation Section.

Results: Permits and Technical Studies for Special Laws or Conditions

Regulatory Requirements

Regulatory permits will not be required for this project.

Federal Endangered Species Act Consultation Summary

Not required for this project.

California Endangered Species Act Consultation Summary

Not required for this project.

Wetlands and Other Waters Coordination Summary

Not required for this project.

Project Impacts

The Burrowing Owl Protocol, as recommended by the California Department of Fish and Game, advises that a 75-meter (250-foot) buffer protecting nesting burrowing owls from construction related activities be implemented. The proposed project location is situated within 75-meters of nesting burrowing owls. The project may cause indirect short-term noise impacts to the pair during construction. The existing foraging habitat surrounding

SCE facilities is being proposed for future non-SCE developments. These developments, if not currently underway, will likely occur in the next few years eliminating the forging habitat and potential dispersal locations for the burrowing owl outside of SCE property. SCE is proposing to passively relocate the burrowing owls to ensure the future success of the nesting pairs and avoid any indirect impacts during nesting season.

SCE proposed facility will not result in the significant loss of foraging habitat. SCE's current facilities and property provide ample space for the pair to successfully forage and nest. SCE proposes to use passive relocation measures to ensure the owls have the greatest opportunity for establishment.

Avoidance, Minimization, & Mitigation Measures

- The impact area for the project will be kept to a minimum.
- At no time will active (with eggs) bird nests be destroyed.
- Based on the current project information, and biological studies, there will be no impacts to federal/state threatened/endangered species due to this project.
- Permits will not be required from CDFG, ACOE , nor RWQCB.

In order to mitigate for significant indirect impacts to nesting burrowing owls located on the Mira Loma Substation adjacent to the proposed project area, SCE will conduct a pre-construction survey within the project footprint and adhere to the following protocol for passively relocating burrowing owls. The protocols used for passive relocation will follow the California Burrowing Owl Consortium *Burrowing Owl Survey Protocol and Mitigation Guidelines.*

Protocol for Burrowing Owl Passive Relocation

1. Passive relocation will only occur outside the breeding season (approximate breeding season runs from February 15-August 31) and preferably immediately before the initiation of the breeding season (late January-early February). Active burrows will be monitored by a qualified biologist, after the nesting season, prior to any relocation activity to ensure all young have fledged and/or the nest is not active.

2. Burrows outside of the 75 meter buffer zone from the project area will be enhanced (enlarged or cleared of debris) or created (by installing artificial burrows) in a ratio of 1:1 in adjacent suitable habitat that is contiguous with the foraging habitat of the affected owls. Burrows will be created at least one month prior to passive relocation.

3. Once it has been established that young have fledged and dispersed away from the natal territory, the remaining adult owls will be captured using bal-chatri's, noose carpets and/or radio operated bownets. Captured owls will then be banded with USFWS metal leg bands and color bands.

4. Immediately after capturing the owls, their respective burrows will be systematically inspected with a fiber optic scope, excavated, and collapsed by the qualified biologist, to prevent occupation by other owls.

5. An Annual Report will be submitted to CDFG, USFWS, and the local jurisdiction to report on the success of the translocation efforts. Therefore monitoring would commence during the first nesting season and would last through the dispersal period in the second nesting season.

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Appendix A

Forensic Entomology Services Letter

FORENSIC ENTOMOLOGY SERVICES

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28 September 2006

Maija E. Benjamins, Biologist
Corporate Environment, Health and Safety Division
Southern California Edison
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RE: Mira Loma Substation, SCE Site on Hamner Avenue,
Ontario, for Delhi Sands Flower-loving Fly Habitat

Maija:

Protocol surveys have been conducted for five consecutive years during the adult flight season of the Delhi Sands Flower-loving Fly (DSF), Rhaphiomyidas terminatus abdominalis, on an 18 acre property at the southeast corner of the Mira Loma Substation in Ontario, San Bernardino County. The site is located west of Hamner Avenue (Milliken Avenue) and north of a dairy (removed during the 2006 survey). No DSF specimens have been recorded from this property. During the survey seasons, other insect species have been encountered and recorded such as flies in the families Asilidae, Mydidae, Apioceridae, Bombyliidae, Syrphidae, Conopidae, along with many species of bees, ants and wasps. In 2002, when surveys were initiated, the habitat was primarily abandoned vineyards with limited exposed sandy soils and overgrown with mustards and other weedy plants. By the completion of the 2006 surveys, the property consisted of tumbleweed, mustards, dried grasses, and little in the way of exposed, sandy soils. Much of the northern corner of the site had been previously graded and the soils compacted.

The habitat currently lacks many of the usual indicators seen in areas that support DSF populations such as croton, various buckwheat species, and other native vegetation. Telegraph weed is reduced to 1-2 plants on the entire site. Due to its degraded condition, it is doubtful that the property could support colonies of the DSF. The overall insect diversity and abundance has been reduced significantly within the last three years, many species being replaced by introduced taxa. Construction east of the site has further isolated the property from previous DSF introduction corridors.

David K. Faulkner
Entomologist, USFWS Permit #TE-838743-3