Biological Resources Technical Report

for the

Mesa 500 kV Substation Project

Prepared for:

SOUTHERN CALIFORNIA EDISON®
An *EDISON INTERNATIONAL*® Company

Prepared by:

INSIGNIA ENVIRONMENTAL

February 2015

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EXECUTIVE SUMMARY

Southern California Edison Company (SCE) is proposing the Mesa 500 kilovolt (kV) Substation Project (Proposed Project). The Proposed Project area is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The Proposed Project area overlaps with portions of Segments 7, 8, 9, and 11 of the Tehachapi Renewable Transmission Project.

The Proposed Project consists of the following main components:

- Construction of the proposed Mesa Substation and demolition of the existing Mesa Substation within the City of Monterey Park
- Removal, relocation, modification and/or construction of transmission, subtransmission, distribution, and telecommunications structures within the cities of Monterey Park, Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County
- Conversion of an existing distribution source line from overhead to underground between three street lights on Loveland Street within the City of Bell Gardens
- Installation of a temporary 220 kV line loop-in at Goodrich Substation within the City of Pasadena

Construction and operation of the proposed Mesa Substation would require additional minor modifications within several existing substations throughout the Electrical Needs Area, as discussed in Section 3.5.4.23, Modifications to Existing Substations in Chapter 3, Project Description. These minor modifications would be located within the substations' existing fenced perimeters, and the associated work would be similar to Operation and Maintenance (O&M) activities currently performed by SCE; therefore, construction of these minor modifications would not result in changes to biological resources in the area. As a result, these components are not discussed further in this Biological Resources Technical Report (BRTR).

The region includes a mixture of residential and commercial developments, industrial and nursery areas, and disturbed habitats.

This BRTR identifies existing or potential biological resources that may be present within or adjacent to the Proposed Project, assesses the likelihood of the Proposed Project to affect sensitive resources, describes potential impacts to biological resources, and provides applicant-proposed measures (APMs) that would be used to avoid and/or minimize potential for impacts.

Based on the background research and field visits for the Proposed Project, SCE determined that two special-status plant species—California black walnut (*Juglans californica*) and Nevin's Barberry (*Berberis nevinii*)—are present within the Proposed Project area or in the immediate vicinity. Three special-status plant species— southern tarplant (*Centromadia parryi* ssp. *australis*), Plummer's mariposa-lily (*Calochortus plummerae*) and intermediate mariposa-lily

(*Calochortus weedii* var. *intermedius*)—have a moderate potential to occur in the construction areas. In addition, the following seven special-status wildlife species were identified as being present within or near the Proposed Project area:

- Belding's orange-throated whiptail (*Aspidoscelis hyperythrus beldingi*)
- American peregrine falcon (*Falco peregrinus anatum*),
- coastal California gnatcatcher (*Polioptila californica californica*),
- least Bell's vireo (*Vireo bellii pusilus*),
- loggerhead shrike (*Lanius ludovicianus*),
- Swainson's hawk (*Buteo swainsoni*), and
- yellow warbler (*Setophaga petechia*).

The following four special-status wildlife species have a moderate potential to occur in the construction areas:

- western spadefoot (*Spea hammondii*)
- western pond turtle (*Emys marmorata*)
- western burrowing owl (*Athene cunicularia*)
- southern grasshopper mouse (*Onychomys torridus ramona*)

Two sensitive vegetation communities occur within the Proposed Project area: southern sycamore-alder riparian woodland and California walnut woodland. United States Fish and Wildlife Service-designated critical habitat for coastal California gnatcatcher is also located within the Proposed Project area.

SCE is currently planning to implement a series of APMs designed to avoid and minimize the temporary and permanent direct and indirect impacts of the Proposed Project. With the implementation of these measures, impacts to sensitive habitats, hydrologic features, and special-status species are anticipated to be less than significant pursuant to the California Environmental Quality Act.

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1 – INTRODUCTION

Southern California Edison Company (SCE) is proposing the Mesa 500 kilovolt (kV) Substation Project (Proposed Project). The Proposed Project is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County. The Proposed Project area overlaps with portions of Segments 7, 8, 9, and 11 of the Tehachapi Renewable Transmission Project (TRTP), as discussed further in Section 2 – Background.

This Biological Resources Technical Report (BRTR) was prepared to identify any existing or potential sensitive biological resources that may be present within or adjacent to the Proposed Project area, including vegetation communities, hydrologic features, and special-status plant and animal species and their associated habitat. This document assesses the likelihood of the Proposed Project to affect these biological resources, describes potential impacts resulting from the construction of the Proposed Project, and recommends applicant-proposed measures (APMs) to avoid and minimize impacts to biological resources.

2 – BACKGROUND

SCE is currently constructing the TRTP to provide the electrical facilities necessary to interconnect new wind turbine-based electrical generation from the Tehachapi Wind Resource Area (TWRA). The TRTP consists of a series of new and upgraded high-voltage transmission lines and substation facilities that would deliver electricity from renewable wind energy generators in eastern Kern County, California to the Los Angeles Basin. The TRTP consists of eight segments—Segment 4 through Segment 11.

Segments 4, 5, and 10 involve upgrading and expanding SCE's existing transmission system north of the Vincent Substation near Acton, California in order to integrate TWRA wind generation into SCE's electrical system. Segments 6, 7, 8, and 11 involve upgrading and expanding SCE's existing transmission system south of the Vincent Substation in order to deliver TWRA wind generation to SCE's load centers in the Los Angeles Basin. Segment 9 involves building the new Whirlwind Substation in Kern County, California; expanding the Vincent Substation near Acton, California and the Antelope Substation in Lancaster, California; and upgrading Gould Substation in La Cañada Flintridge, California, Mesa Substation in Monterey Park, California, and Mira Loma Substation in Ontario, California.

The Mesa Substation site includes the southern portion of Segment 11, the southwestern portion of Segment 7, and the northwestern portion of Segment 8. In addition, Segment 9 includes an upgrade to Mesa Substation. Additional work areas within the Mesa Substation site, including the southwestern portion of the site, do not overlap with the TRTP. The Goodrich Substation site is located north of the Mesa Substation site along Segment 11 of the TRTP.

3 – PROJECT DESCRIPTION

3.0 LOCATION

The Proposed Project site is located in Los Angeles County, California in the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, as well as in unincorporated Los Angeles County, as depicted in Figure 1: Project Overview Map.

The construction of the 500/220/66/16 kV Mesa Substation would be located in the City of Monterey Park. The City of Monterey Park is bordered by the unincorporated area of East Los Angeles to the west, the cities of Los Angeles and Alhambra to the north, the City of Rosemead to the east, and the City of Montebello to the east and south. The San Gabriel Mountains are located approximately 8 miles to the north of the City of Monterey Park and form the northern boundary of the San Gabriel Valley, in which the city lies. The City of Monterey Park is generally urban and developed with a few areas of open space or parkland. Land use in the area surrounding the Proposed Project is industrial and commercial to the north, State Route (SR-) 60 to the south, the SCE Montebello Service Center to the east, the Resurrection Cemetery to the northeast, and low-density residential and commercial zones to the west. A large retail shopping center—Monterey Park Market Place—is currently in the entitlement phase and is proposed to be located directly east of the Proposed Project site.

The unincorporated area of Los Angeles County in the vicinity of the Proposed Project is bordered by the City of Monterey Park to the west and south, the unincorporated area of South San Gabriel to the north, the City of Montebello to the southeast, and the City of Rosemead to the east. An approximately 1.1-mile portion of the telecommunications line would be located within the Whittier Narrows Natural Area and along Potrero Grande Drive and Hill Drive within the unincorporated community of South San Gabriel. Whittier Narrows Natural Area is located on property owned by the United States (U.S.) Army Corps of Engineers (USACE) and managed by Los Angeles County Department of Parks and Recreation. Existing land uses in the vicinity include a mix of commercial and residential uses. In addition, approximately 2 miles of the telecommunications line would be located along San Gabriel Boulevard and Durfee Avenue in unincorporated Los Angeles County. Existing land uses in the vicinity include Whittier Narrows Recreation Area, Whittier Narrows Water Reclamation Plant, the USACE Los Angeles District offices, commercial and residential uses, and a trucking storage yard.

Portions of the transmission, subtransmission, distribution, and telecommunications work would occur within the City of Montebello. The City of Montebello is bordered to the north by the cities of Monterey Park and Rosemead, to the southwest by the City of Commerce, to the southeast by the City of Pico Rivera, to the east by the Whittier Narrows Recreation Area, and to the west by the City of Commerce and unincorporated areas of Los Angeles County. The City of Montebello predominately consists of industrial, commercial, and residential uses. The majority of the transmission, subtransmission, distribution, and telecommunications work within the City of Montebello would occur within existing SCE rights-of-way (ROWs) and franchise locations along public roads. Telecommunications lines would be installed on existing overhead poles and predominantly within existing conduits along Potrero Grande Drive, San Gabriel Boulevard, Lincoln Avenue, Avenida De La Merced, Wilcox Avenue, and Markland Drive. Existing land

Figure 1:
Project Overview Map
Mesa 500 kV Substation Project

Temporary 220 kV line loop-in at Goodrich Substation

New telecommunications line
from transmission tower M40-T3 to Mesa Substation

Mesa Substation and associated
transmission, subtransmission, distribution, and telecommunications lines

Rio Hondo
Corridor

Montebello
Hills

San Gabriel
River Corridor

New telecommunications line
from transmission tower M38-T5 to Mesa Substation

Telecommunications line re-route between
Mesa and Harding substations

Replacement of an existing lattice steel tower on the
Goodrich-Laguna Bell 220 kV Transmission Line

Street light source line conversion from
overhead to underground within Loveland Street

Main Component Study Areas

- Mesa Substation Study Area
- Proposed Telecommunications Study Area
- Goodrich Substation Study Area
- Goodrich-Laguna Bell 220 kV Tower Replacement Study Area
- Distribution Street Light Undergrounding Study Area

Natural Areas

- Montebello Hills
- Rio Hondo Corridor
- San Gabriel River Corridor

Detail Area

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uses in these areas are predominately residential. A staging area would be located within an existing ROW east of Mesa Substation and would be bordered by a third-party landscape nursery, a cemetery, and residential uses to the northeast, and by a vacant former landfill and SR-60 to the south. To the south of Mesa Substation, a staging area would be located within an existing ROW, bordered by SR-60 to the north, Schurr High School to the south and east, another third-party landscape nursery to the southwest, and a shopping center to the west.

An approximately 0.9-mile portion of the telecommunications line would be located along San Gabriel Boulevard within the City of Rosemead. The proposed telecommunications line would be installed on existing overhead poles. Uses along this portion of the telecommunications route include a mix of commercial and residential uses, a church, and Don Bosco Technical Institute.

Within the City of South El Monte, an approximately 160-foot segment of the telecommunications line would be located south of Durfee Avenue on existing overhead poles. Existing adjacent land uses include commercial and residential uses and Whittier Narrows Recreation Area.

Within the City of Commerce, an existing transmission tower would be replaced within an SCE area of use, approximately 2.1 miles north of Laguna Bell Substation and approximately 2.4 miles southwest of Mesa Substation. The City of Commerce is bordered by the unincorporated community of East Los Angeles to the north, the City of Bell Gardens to the south, the cities of Montebello and Pico Rivera to the east, and the cities of Vernon and Maywood to the west. Land uses surrounding the proposed 220 kV tower replacement include a Union Pacific rail line to the north, an SCE ROW to the south, and industrial uses to the east and west.

Within the City of Bell Gardens, a distribution source line connecting three existing street lights would be converted from an overhead to underground configuration approximately 0.2 mile south of Laguna Bell Substation. The City of Bell Gardens is bordered by the City of Commerce to the north, the City of Southgate to the south, the City of Downey to the east, and the cities of Bell and Cudahy to the west. Land uses surrounding the proposed underground conversion include an SCE area of use to the north and south and residential uses to the east and west.

The installation of a temporary 220 kV line loop-in at Goodrich Substation would be located in the City of Pasadena. The City of Pasadena is located approximately 10 miles northeast of downtown Los Angeles and is bordered by the San Gabriel Mountains to the north. The city is the largest in the San Gabriel Valley and is surrounded by the cities of La Cañada-Flintridge, South Pasadena, Arcadia, Sierra Madre, San Marino, Glendale, and Los Angeles, as well as the unincorporated community of Altadena. Land uses surrounding Goodrich Substation include vacant/undeveloped land and a parking lot to the north, Interstate (I-) 210 and East Foothill Boulevard to the south, the Pasadena City College Community Education Center to the east, and residential uses to the west.

3.1 DRIVING DIRECTIONS

The existing Mesa Substation can be accessed by traveling north on I-5. Exit on Telegraph Road, turn left on Telegraph Road, turn right on Garfield Avenue, turn right on Via Campo, turn left on East Markland Drive, and turn right on Potrero Grande Drive. Continue approximately 0.5 mile on Potrero Grande Drive, and Mesa Substation is on the right. Goodrich Substation can be

accessed by traveling north on I-5. From I-5, take the SR-57 north exit, and follow signs to I-210 west. Then take the I-210 west exit at Madre Street, turn right on Sierra Madre Villa Avenue, and turn left on East Foothill Boulevard. Continue approximately 0.25 mile, and Goodrich Substation is on the right.

3.2 PROJECT COMPONENTS

The following subsections provide a description of the transmission, subtransmission, distribution, and telecommunications line work associated with the Proposed Project. The transmission lines would be installed in existing SCE ROWs, franchise locations, and SCE-owned property.

3.2.0 500/220 kV Transmission Lines

The Proposed Project would include the following 500 kV transmission line elements:

- Removal of an existing overhead portion of the Mira Loma-Vincent 500 kV Transmission Line, including up to four existing lattice steel towers (LSTs)

- Loop-in the existing overhead, single-circuit Mira Loma-Vincent 500 kV Transmission Line into the new 500 kV switchrack. The existing overhead transmission line alignment to Mesa Substation would be realigned with up to three new LSTs, resulting in the Mesa-Mira Loma and Mesa-Vincent 500 kV transmission lines

The Proposed Project would include the following 220 kV transmission line elements:

- Removal of portions of the existing overhead 220 kV transmission lines, including approximately 35 existing single- and double-circuit LSTs and approximately four tubular steel poles (TSPs)

- Loop-in of the existing overhead Goodrich-Laguna Bell and Laguna Bell-Rio Hondo 220 kV transmission lines into the new 220 kV switchrack by constructing new overhead getaways—supported by new and replacement double-circuit LSTs—from the existing transmission line alignment to Mesa Substation

- Relocation of eight existing overhead 220 kV transmission lines into the new 220 kV switchrack by constructing new overhead getaways—supported by approximately 25 new double-circuit LSTs and approximately six new single- or double-circuit TSPs—from the existing transmission line alignment to Mesa Substation

Replacement of an existing 220 kV LST with a new 220 kV LST to increase the capacity rating of the existing Goodrich-Laguna Bell (future Laguna Bell-Mesa No. 1)-Redondo 220 kV Transmission Line

3.2.1 66 kV Subtransmission Lines

The Proposed Project would include the following 66 kV subtransmission line elements:

- Relocation of 16 overhead 66 kV subtransmission lines into the new 66 kV switchrack with new underground getaways, which would involve the following:

  - the removal of existing overhead structures
  - the installation of new underground line segments in new duct banks and vault structures
  - the installation of new overhead line segments supported by single- and double-circuit TSPs and light-weight steel (LWS) poles

3.2.2 Distribution Lines

The Proposed Project would include the following distribution line elements:

- Relocation of five existing underground 16 kV distribution lines into the new 16 kV switchracks with new underground getaways
- Conversion of a portion of an existing distribution street light source line from an overhead to underground configuration between three street lights

Within the proposed Mesa Substation, five initial 16 kV distribution circuits would be placed in an underground conduit system. At ultimate build-out, the proposed substation could accommodate 12 kV distribution circuits. Additional electrical distribution circuits would be constructed from the proposed substation to areas of demand on an as-needed basis and with consideration of the following guidelines:

- The location of the current load growth
- Existing electrical distribution facilities in the area
- The location of roads and existing SCE ROWs

3.2.3 Telecommunications Lines

Telecommunications infrastructure, which includes DC power, light wave, data, and channel equipment, would be added to connect the Proposed Project to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, physical and cyber security, and telephone voice services for the Proposed Project and 20 associated facilities. The Proposed Project would include the following telecommunications line elements:

- Relocate existing overhead and underground telecommunications lines, including telecommunications structures, from the existing Mesa Substation to its point of termination within the proposed Mesa Substation footprint, which would include the use of approximately five existing vaults and one existing manhole

- Install new telecommunications lines between transmission tower M40- T3—near the intersection of San Gabriel Boulevard and Darlington Avenue in the City of Rosemead—and Mesa Substation, including the use of existing manholes and utility poles

- Install new telecommunications lines overhead and in existing and new underground conduits between transmission tower M38-T5—near Durfee Avenue in unincorporated Los Angeles County—and Mesa Substation, including the use of two new manholes, and existing manholes and utility poles

- Install new telecommunications lines overhead and in existing and new underground conduits between Mesa Substation and the intersection of Montebello Boulevard and Lincoln Avenue near Harding Substation, including the use of existing manholes and utility poles

- Remove an existing overhead and underground portion of a telecommunications line between Mesa Substation and an existing splice location in an existing manhole at the intersection of Montebello Boulevard and Lincoln Avenue

- Reroute telecommunications lines within Pardee Substation, Vincent Substation, and Walnut Substation to satisfy diversity requirements

- Relocate privately owned cellular towers and antennas to the northeast corner of the Mesa Substation property

- Install a foundation for a potential future microwave tower within the walled portion of the proposed Mesa Substation

3.2.4 Poles/Towers

500/220 kV Transmission Poles/Towers

The 500 kV transmission route and portions of the 220 kV routes of the Proposed Project would utilize LSTs. Approximately 29 LSTs would be installed for the Proposed Project. The LSTs would have an approximately minimum footprint of 28 feet by 28 feet and a maximum footprint of 48 feet by 48 feet and would extend approximately 113 feet to 200 feet aboveground. Each LST would be attached to four concrete foundations that would be 3 to 7 feet in diameter and would extend underground to a depth of 30 to 60 feet with 1 foot to 4 feet of concrete visible aboveground. The foundations for the 29 LSTs would require up to approximately 200 cubic yards (CY) of concrete or 5,800 CY of concrete total.

Approximately six TSPs would be installed for the 220 kV transmission portion of the Proposed Project. The TSPs would be 3 to 7 feet in diameter at the base and would extend 100 to 180 feet aboveground. The TSPs would be attached to concrete foundations that would be 5 to 7 feet in diameter and would extend underground approximately 30 to 60 feet with up to approximately 2 feet of concrete visible aboveground. Each TSP would use approximately 88 CY of concrete, or 696 CY of concrete total. The TSPs would be steel structures with a dulled finish.

Transmission facilities would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006) where feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with *Reducing Avian Collisions with Power Lines: The State of Art in 2012* (APLIC 2012).

66 kV Subtransmission Poles/Towers

Approximately 24 TSPs would be installed for the subtransmission portion of the Proposed Project. The TSPs would be 3 to 5 feet in diameter at the base and extend 50 to 100 feet aboveground. The TSPs would be attached to concrete foundations that would be 5 to 7 feet in diameter and would extend underground 20 to 40 feet with up to 4 feet of concrete visible aboveground. Each TSP would use 14 to 63 CY of concrete. The TSPs would be steel structures with a dulled finish.

The 66 kV subtransmission structures would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

Telecommunications Poles/Towers

The telecommunications system cables would utilize existing wood poles, LWS poles, and LSTs, and would range in height from 52 to 79 feet aboveground. In addition, up to 46 existing wood poles would be replaced as part of the Proposed Project, depending on the results of wind-load testing. The wood poles would be 1.2 to 2 feet in diameter at the base and extend 52 to 79 feet aboveground.

3.2.5 Conductor/Cable

The following subsections describe the aboveground and underground installation of the transmission, subtransmission, distribution, and telecommunications lines.

Aboveground Installation

The 500 kV transmission lines would be installed on LSTs and the 220 kV transmission lines would be installed on LSTs and TSPs. The 500 kV LSTs would support a two-conductor bundle of non-specular 2,156 kcmil[1] aluminum-clad steel reinforced (ACSR) conductors, and the 220 kV LSTs and TSPs would support a two-conductor bundle of non-specular 1,590 kcmil ACSR conductor. The average span length between towers would be approximately 600 feet.

The aboveground 66 kV transmission lines would be installed on single- or double-circuit TSPs. The 66 kV TSPs would support non-specular 954 kcmil stranded aluminum copper conductor. The average span length between TSPs would be approximately 180 feet.

The telecommunications cable would be installed on existing wood poles, LWS poles, and LSTs. These structures would support 0.5-inch-diameter fiber optic cable. The lowest cable would be 20 to 30 feet above the ground. The average span length between overhead structures would be 150 to 200 feet.

The distribution lines would be installed entirely underground.

[1] kcmil (1,000 circular mils [cmils]) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of cmils. A cmil is the area of a circle with a diameter of 0.001 inch.

Below-Ground Installation

The Proposed Project would include the installation of approximately 5.5 miles of underground subtransmission lines in new duct banks, ranging in length from 800 to 3,300 feet outside of the substation perimeter, with approximately 28 vaults.[2] The duct banks would consist of six 5-inch conduits, conduit spacers, and concrete.

The Proposed Project includes the installation of approximately 2.9 miles of underground telecommunications cable in existing and new underground duct banks. The approximately 2-foot-wide by 1,600-foot-long by 3-foot-deep newly installed duct banks would consist of approximately 5-inch conduits, conduit spacers, and concrete. In addition, approximately 9,400 feet of existing underground duct banks would be utilized. The Proposed Project would utilize approximately 18 existing vaults and three new vaults measuring approximately 5 feet wide by 5 feet long by 6 feet deep.

The Proposed Project would include the installation of approximately 1 mile of underground distribution lines in new duct banks. The duct banks would measure, at a minimum, 2 feet wide by 4.5 feet deep and would consist of approximately 24 5-inch conduits, conduit spacers, and concrete. Five new vaults would be installed, measuring approximately 7 feet wide by 18 feet long by 8 feet deep.

3.2.6 Substations

Substation Parking Areas

The control building would include associated parking.

Substation Perimeter

The proposed Mesa Substation would be enclosed on all sides by a perimeter wall measuring at least 10 feet in height. Barbed wire and/or razor wire would be affixed near the top of the perimeter enclosure inside of the substation and would not be visible from the outside.

Mesa Substation

The main activity associated with the Proposed Project involves the construction of the proposed, approximately 69.4-acre, 500/220/66/16 kV Mesa Substation and demolition of the existing, approximately 21.6-acre 220/66/16 kV Mesa Substation on SCE fee-owned property. The proposed 500/220/66/16 kV Mesa Substation would be a staffed substation operating at 3,360 megavolt-ampere (MVA) with a potential capacity of 4,480 MVA at 500/220 kV, 1,120 MVA at 220/66 kV, and 112 MVA at 66/16 kV. The existing Mesa Substation occupies approximately 21.6 acres and is located within the same approximately 69.4-acre property that the proposed Mesa Substation would be constructed.

[2] There would be a total of 28 vaults for the Proposed Project: 13 within the approximately 69.4-acre substation site and 15 outside of the substation site.

Modifications to Existing Substations

Goodrich Substation

The Proposed Project would require the temporary loop-in of the Eagle Rock-Mesa 220 kV Transmission Line into Goodrich Substation to provide a second line of service to the City of Pasadena during the loop-in of the Goodrich-Laguna Bell 220 kV Transmission Line into the proposed Mesa Substation. This would require the construction of a temporary tower, which would be removed once the Goodrich-Laguna Bell 220 kV Transmission Line is energized at the proposed Mesa Substation. An approximately 1.5-acre staging yard would be established north of the existing Goodrich Substation site.

3.3 RIGHT-OF-WAY REQUIREMENTS

The Proposed Project would be located on SCE existing or to-be-acquired fee-owned property, existing SCE ROWs, and franchise locations. Upon final engineering and receipt of Proposed Project approvals, SCE would confirm the necessary land rights and acquire any additional land rights required for the Proposed Project.

3.4 CONSTRUCTION

The following subsections describe the construction activities associated with the Proposed Project.

3.4.0 Staging Areas

Construction of the Proposed Project would require the establishment of temporary staging yards. Typically, two types of staging yards would be used during construction—substation construction staging yards and transmission, subtransmission, distribution, and/or telecommunications construction staging yards. Staging yards would be used as a reporting location for workers, as well as vehicle and equipment parking and material storage. The yards may also have construction trailers for supervisory and clerical personnel. Staging yards may be lit for staging and security. Normal maintenance and refueling of construction equipment would also be conducted at these yards. All refueling and storage of fuels would be in accordance with the Storm Water Pollution Prevention Plan (SWPPP) issued for the Proposed Project.

SCE anticipates using one or more of the possible locations listed in Table 1: Potential Staging Yard Locations, as the staging yard(s) for the Proposed Project. Typically, each yard would be 5 to 25 acres in size, depending on land availability and intended use. Preparation of the staging yard would include temporary perimeter fencing and, depending on existing ground conditions at the site, grubbing and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock. Any land that may be disturbed at the staging yard would be returned to pre-construction conditions or left in its modified condition.

Work Areas

Transmission and subtransmission construction work areas serve as temporary working areas for crews and where Proposed Project-related equipment and/or materials are placed at or near each structure location, within SCE property, existing ROWs, or franchise areas. Table 2:

Approximate Laydown/Work Area Dimensions identifies the approximate dimensions of land disturbance for these Proposed Project construction areas.

Table 1: Potential Staging Yard Locations

Yard Name	Location	Condition	Approximate Area (Acres)	Proposed Project Component
Material Staging Yard 1	Northwest of the intersection of Potrero Grande Drive and Saturn Drive	Disturbed	5.7	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 2	Southwest of the intersection of Via Campo and North Vail Avenue	Portions Disturbed and Undisturbed	3.8	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 3	Southeast of the intersection of Potrero Grande Drive and Greenwood Avenue	Disturbed	23.9	Mesa Substation and transmission, subtransmission, distribution, and telecommunications lines
Material Staging Yard 4	North of Goodrich Substation	Disturbed	1.5	Temporary 220 kV line loop-in at Goodrich Substation

The new structure pad locations and laydown/work areas would first be cleared of vegetation and/or graded as required to provide a reasonably level and vegetation-free surface for structure installation. Sites requiring grading would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area would be compacted to at least 90-percent relative density, and would be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a temporary crane pad. The crane pad would occupy an area of approximately 50 feet by 50 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pad may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad would be determined during final engineering and selection of the appropriate construction methods to be used by SCE or its contractor.

Access Roads and/or Spur Roads

Where required, a network of existing access roads could be improved and new roads would be constructed in accordance with current SCE road practices to support the construction and O&M of the Proposed Project.

Table 2: Approximate Laydown/Work Area Dimensions

Laydown/Work Area Feature	Preferred Size (L x W) (Feet)
Transmission Guard Structures	150 x 50
Subtransmission Guard Structure	75 x 50
Lattice Steel Towers	220 x 220
Tubular Steel Poles	220 x 150
Lightweight Steel (LWS) H-Frame	175 x 125
LWS Pole	175 x 100
Transmission Conductor Stringing	600 x 150
Subtransmission Conductor Stringing	300 x 100
Transmission Conductor Splicing	200 x 150
Underground Duct Bank (Unpaved)	13,000 x 30
Underground Duct Bank (Paved)	5,000 x 3
Underground Vaults (Unpaved)	100 x 100
Underground Vaults (Paved)	20 x 30

Note: The dimensions listed in this table are preferred for construction efficiency; actual dimensions may vary depending on Proposed Project constraints.

Typical transmission access consists of a network of unpaved and paved roads accessed from public and private roads located on public and private lands. These access roads include a network of through roads and spur roads that are used to access transmission facilities. Access to the transmission line ROW for construction activities and future O&M activities associated with the Proposed Project would be accomplished by utilizing this network of roads.

During construction of the Proposed Project, crews would utilize existing public roads and existing transmission access roads to the maximum extent feasible. New access roads would be constructed in accordance with current SCE practices for safety during construction and O&M. Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities.

Typical construction activities associated with rehabilitation of existing unpaved access roads include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting to remove potholes, ruts, and other surface irregularities in order to provide a riding surface that is capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades, such as protection (e.g., soil cover and steel plates) for existing underground utilities.

Typical construction activities associated with new roads generally include similar activities as described for the rehabilitation of existing unpaved roads, but may also include the following additional construction requirements that depend upon the existing land terrain:

- Existing relatively flat terrain with grades up to 4 percent: Construction activities are generally similar to rehabilitation activities on existing unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, water bars, and culverts). Detailed information on locations requiring drainage improvements would be provided during final engineering.

- Existing rolling terrain with grades of 5 to 12 percent: Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), retaining walls, and slope stability improvements (e.g., geogrid reinforcement). The extent of retaining walls and slope stability improvements would be determined during final engineering, as would detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.

- Existing mountainous terrain with grades over 12 percent: Construction activities would include rolling terrain construction activities and would also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements would be provided during final engineering.

Typical construction activities associated with temporary access could include vegetation clearing, blade-grading, grubbing, mowing, and re-compacting.

In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (i.e., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements and earth-retaining structures would be determined during final engineering.

Generally, access roads would have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width would be widened and would generally range up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients would be leveled so that sustained grades generally do not exceed 14 percent. Curves would typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where a 50-foot minimum radius cannot be achieved.

Access roads would typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration would be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as an equipment pad set-up area for

construction activities. If an equipment pad is built, it would remain a permanent feature for O&M.

The Proposed Project access roads generally follow the proposed transmission line route. Transmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between tower sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites.

Approximately 5.6 miles of existing, dirt access on SCE property and existing ROWs would be used to access the Proposed Project work areas. It is not anticipated that these roads would require improvements; however, if improvements are required, they would be conducted in accordance with existing O&M practices.

Helicopter Access

Helicopters would be used to support construction activities. Specifically, SCE currently anticipates helicopters would be utilized during conductor stringing activities for the 500 kV and 220 kV transmission lines. SCE would consider Institute of Electrical and Electronics Engineers (IEEE) Standards 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*, in the construction of the Proposed Project. For the Proposed Project, helicopters be based at an existing aviation facility and fly to the site from that location. Helicopters may use the potential staging yard locations as needed.

Helicopter operations and support areas typically include helicopter staging and material yards, storage and maintenance sites, and ground locations in close proximity to conductor pulling, tensioning, and splice sites and/or within previously disturbed areas near construction sites. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during off days, for safety and security concerns, helicopters and their associated support vehicles and equipment may be based at a local airport(s).

Helicopters typically used for stringing activities would include a Hughes 500 F. Helicopters would be based out of the El Monte and Chino airports, where refueling would occur.

Vegetation Clearance

The proposed Mesa Substation site would require vegetation clearing within its boundaries—including tree and brush removal—to prepare the approximately 69.4-acre site for installation of the substation equipment.

Vegetation clearing—including tree and brush removal and tree trimming—may also be required in the transmission ROWs to accommodate construction work areas and to reduce the potential for fire during construction activities.

Erosion and Sediment Control and Pollution Prevention during Construction

Storm Water Pollution Prevention Plan

Construction of the Proposed Project would disturb a surface area greater than 1 acre. Therefore, SCE would be required to obtain coverage under the Statewide Construction General Permit

(Order No. 2009-0009-DWQ) from the State Water Resources Control Board. Commonly used best management practices (BMPs) are storm water runoff quality control measures (boundary protection), dewatering procedures, and concrete waste management. The SWPPP would be based on final engineering design and would include all Proposed Project components.

Dust Control

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the South Coast Air Quality Management District. These measures may include the use of water trucks and other dust control measures.

Hazardous Materials

Construction of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Material Safety Data Sheets would be made available at the construction site for all crew workers.

Based on the anticipated volume of hazardous liquid materials, such as mineral oil, in use at the site being in excess of 1,320 gallons, a Spill Prevention, Control, and Countermeasure Plan is in place for the site and would be updated (in accordance with Tile 40, Parts 112.1 to 112.7 of the Code of Federal Regulations [CFR]).

Reusable, Recyclable, and Waste Material Management

Construction of the Proposed Project would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (portable toilets). Sanitation waste (i.e., human-generated waste) would be disposed of in accordance with applicable sanitation waste management practices. Material from existing infrastructure that would be removed as part of the Proposed Project such as conductor, steel, concrete, and debris, would be temporarily stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal.

The existing wood poles removed for the Proposed Project would be returned to a staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a Regional Water Quality Control Board-(RWQCB-) certified municipal landfill.

Material excavated for the Proposed Project would either be used as fill and/or disposed of offsite at an appropriately licensed waste facility. If contaminated material is encountered during excavation, work would stop at that location and SCE's Spill Response Coordinator would be called to the site to make an assessment and notify the proper authorities.

Cleanup and Post-Construction Restoration

SCE would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (which may include the material staging yards, stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project.

If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

3.4.1 Substation Construction

Site Preparation and Grading

Approximately 83 acres of the Mesa Substation site would be graded and on-site vegetation on 20 acres would be removed, including trees surrounding the existing Mesa Substation site. Clearing and vegetation removal activities would be accomplished through the use of mowers, excavators, front-end loaders, and/or D-9 bulldozers.

One of the first activities at the proposed Mesa Substation would be to construct the new driveway from East Markland Drive to be utilized as the secondary driveway after energization. The access roads from this driveway would be graded flat to a width of approximately 30 feet to allow for safe operation of construction equipment and delivery of materials. The primary driveway from Potrero Grande Drive would be established once construction activities within the existing Mesa Substation begin. Once the access driveways are constructed, rolling gates would be installed to control access to the site.

Construction of the proposed Mesa Substation would occur in phases. Initial construction activities, including access road construction, would occur in the area of the proposed substation site outside of the existing substation fence. As the new substation equipment is constructed and the new power line alignments are tied into the switchracks, the equipment at the existing substation would be removed and the site would be graded for installation of the new switchracks and associated equipment.

Once the new power line alignments are tied into the new switchracks, construction crews would decommission the site of its existing use. This process would involve removing the existing materials stored around the existing substation site, and eventually the equipment within the existing substation. The proposed Mesa Substation site would be overexcavated, and the on-site soil would be recompacted to prepare the area for site development and remedial grading would ensue. The site development and remedial grading would be based on the recommendations of the geotechnical investigation that achieves the desired on-site pad elevation and foundation support while maintaining adequate site drainage. Approximately 650,000 CY of on-site soil would be overexcavated during the decommissioning process. These activities are anticipated to generate approximately 100,000 CY of material for off-site disposal. Approximately 550,000 CY of structural fill would be required to raise the substation site to the conceptual design elevation, which ranges from 280 to 375 feet above mean sea level. Approximately 60,000 CY of imported Class II base material would be used for the surfacing of Mesa Substation and for the access roads. On-site material would be reused to the extent possible, as recommended by the Geotechnical Engineer. Site grading would be accomplished primarily with bulldozers and backhoes, which would condition, cut and fill, and blend the native soil and imported material to the desired pad elevations. A summary of the anticipated grading quantities for Mesa Substation is provided in Table 3: Substation Cut and Fill Grading Summary.

Table 3: Substation Cut and Fill Grading Summary

Element	Material	Approximate Surface Area (Square Feet)	Approximate Volume (CY)
Site Grading, Cut	Dirt	1,800,000	650,000
Site Grading, Fill	Selected Fill Material/Borrow	2,000,000	550,000
Site Grading, Net	Not Applicable (N/A)	200,000	-100,000
Internal Driveways, Spoils, Net	Dirt	650,000	50,000
Substation Equipment Foundations, Spoils, Cut	Dirt	184,500	25,000
Cable Trench, Spoils Cut	Dirt	45,000	5,000
Drainage Structure, Spoils, Cut	Dirt	5,500 linear feet	1,500
Wall foundation, Spoils, Cut	Dirt	14,000 linear feet	1,400

The initial construction of Mesa Substation would require approximately 100,000 CY—or approximately 10,000 haul truckloads—of imported fill to develop the substation site. The final phase would have approximately 200,000 CY—or approximately 20,000 haul truckloads—of cut material to be exported from the new substation site. Haul trucks would operate periodically, as needed, during the grading phase of construction. In general, no more than 100 truck trips per day for an estimated three to five months would be required to complete the initial phase grading, and no more than 100 truck trips per day for an estimated four to six months would be required to complete the final phase grading. In addition, approximately 20 additional trips per day are anticipated for the delivery of materials and equipment for the duration of construction.

SCE would prepare and implement a drainage plan to minimize surface water and erosion impacts. The substation pad area, which would be raised so that the finished surface of the pad is at a higher elevation than the surrounding area, would be finish-graded from a high point elevation at the center of the pad to the perimeter at a slope of approximately 1 percent. The surrounding area would be regraded and the low points would be filled to provide positive surface drainage to the southwest. Currently, the property generally drains by sheet flow to ephemeral drainages the southwest corner of the site. These ephemeral drainages connect to storm drains that connect to the Rio Hondo Channel, which flows into the Los Angeles River. A retention basin would be constructed in the southwest corner of the proposed substation site and channels would be constructed along the perimeter of the substation to direct the surface runoff to the retention basin.

The permanent cut and fill slopes for the proposed Mesa Substation and the permanent cut and fill for the access roads and retention basin would be stabilized during construction with BMPs that would be described in the Proposed Project SWPPP. Landscaping would also be installed around the perimeter of the proposed substation site. SWPPP BMPs would remain in place and would be maintained until the landscaping has been established.

Ground Surface Improvements

The surface of the substation would be overlain with gravel and the access driveways would be paved. Table 4: Substation Ground Surface Improvement Materials provides a summary of the ground surface improvements at the substation site.

Table 4: Substation Ground Surface Improvement Materials

Element	Material	Approximate Surface Area (Acres)	Approximate Volume (CY)
Access Road Surface Area	Asphalt and/or concrete	19	15,000
Gravel Surfacing	Gravel	52	30,000

Below-Grade Construction

After the substation site is graded, below-grade facilities would be installed. Below-grade facilities include, for example, a ground grid, cable trenches, equipment foundations, substation perimeter foundations, conduits, duct banks, vaults, and basements.

Above-Grade Construction

Above-grade installation of substation facilities such as buses, capacitor banks, switchracks, disconnect switches, circuit breakers, transformers, steel support structures, perimeter wall, the Mechanical Electrical Equipment Room, and the control building would commence after the below-grade structures are in place.

The transformers would be delivered by heavy-transport vehicles and installed on the transformer foundation.

Modifications at Other Facilities

The equipment at the existing Mesa Substation would be removed in stages as the transmission, subtransmission, distribution, and telecommunications lines are transferred to the proposed Mesa Substation components. Upon completion of construction, the area occupied by the existing substation would be occupied by the new substation components.

Modifications at Goodrich Substation may require a temporary loop-in of the Eagle Rock-Mesa 220 kV Transmission Line, which would include installation of a temporary structure, with an approximate height of 110 to 145 feet, and conductor to loop the Eagle Rock-Mesa 220 kV Transmission Line into an existing Goodrich Substation rack position.. The work area for the tower would be approximately 220 by 220 feet, and a staging yard would be established, as detailed in Table 1: Potential Staging Yard Locations.

Land Disturbance Summary

Land disturbance would include all areas affected by construction of the Proposed Project. It is estimated that the total permanent land disturbance for the Proposed Project would be

approximately 76.7 acres. It is estimated that the Proposed Project would temporarily disturb approximately 147.9 acres.

3.4.2 Transmission Line Construction (Above-Ground)

The following subsections describe the above-ground construction activities associated with installing the transmission, subtransmission, distribution, and telecommunications line segments for the Proposed Project.

Pull and Tension Sites[3]

The pulling, tensioning, and splicing set-up locations associated with the Proposed Project would be temporary and the land would be restored to its previous condition following the completion of pulling and splicing activities. The set-up locations require level areas to allow for maneuvering of the equipment and, when possible, these locations would be located on existing roads and level areas to minimize the need for grading and cleanup. Approximately 40 set-up locations are currently proposed. The final number and location of these sites would be determined upon final engineering. The approximate area needed for stringing set-ups associated with wire installation is variable and depends on the terrain. Table 2: Approximate Laydown/Work Area Dimensions provides the approximate dimensions of pulling, tensioning, and splicing equipment set-up areas and laydown areas.

Wire pulls are the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 4,000 to 5,000 feet for transmission lines, every 6,000 to 8,000 feet for subtransmission lines, and every 7,500 to 9,000 feet for wire splices on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is typically diminished. Generally, pulling locations and equipment set-ups would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Telecommunications Pull and Tensions Sites

The average distance between telecommunications pull and tension sites would be approximately 5,000 feet. The telecommunications pull and tension sites would be approximately 20 feet by 100 feet, or approximately 0.05 acre. The Proposed Project would require the use of approximately 19 telecommunications pull and tension sites on SCE property, existing ROWs, franchise locations, the Mesa Substation site, and the SCE Montebello Service Center. Equipment used to pull the telecommunications line would be similar to the equipment described previously for the transmission and subtransmission lines. When existing cable is replaced, flat-bed trucks would haul the old cable off site for disposal or recycling.

[3]The term “pull and tension site” is synonymous with the term “stringing site.”

Temporary Shoo-Flies

A shoo-fly is a temporary power line that is installed during construction to maintain electrical service to the area while allowing portions of a permanent line to be taken out of service, ensuring safe working conditions during construction activities. Three shoo-flies would be utilized during construction. Each shoo-fly would be removed after construction is completed, as described in more detail in the following paragraphs.

One shoo-fly would be installed during the realignment of the 72-inch Metropolitan Water District of Southern California pipeline for the Laguna Bell-Rio Hondo 220 kV circuit. Another shoo-fly would also be installed for the Mesa-Vincent No. 1 220 kV circuit to ensure sufficient supply is maintained at Mesa Substation and other affected substations during construction. A third shoo-fly would be utilized at Goodrich Substation to facilitate the 220 kV line loop-in.

Pole Installation and Removal

Construction crews and equipment would travel to the pole site locations using public roads and new and existing access roads. Section 3.4.4 Equipment Description describes the anticipated equipment and workforce required for the Proposed Project.

Pole and Foundation Removal

The Proposed Project would involve removing structures, conductor, and associated hardware. This work is proposed in the following sequence:

- Road work – Existing access roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish temporary crane pads for structure removal, etc.

- Wire-pulling locations – Wire pulling sites would be located every 4,000 to 5,000 feet for transmission lines and every 6,000 to 8,000 feet for subtransmission lines along the existing utility corridor, and would include locations at dead-end structures and turning points.

- Conductor removal – SCE would remove existing conductors in a method similar to the reverse of the conductor installation process. The old conductor would be transported to a construction yard, where it would be prepared for recycling.

- Structure removal – Structures would be dismantled down to the foundations and the materials would be transported to a construction yard, where they would be prepared for recycling.

- Footing/foundation removal – Footings would be removed to a point 1 to 2 feet below grade and the holes would be filled with excess soil and smoothed to match the surrounding grade. Footing materials would be transported to a construction yard where they would be prepared for disposal.

Any existing transmission lines, subtransmission lines, distribution lines, and telecommunications lines (where applicable) would be transferred to the new structures prior to

removal of existing structures. Any remaining facilities that are not reused by SCE would be removed and delivered to a facility for disposal.

The existing wood poles would be completely removed once the subtransmission and telecommunications lines are transferred to the new poles. The removal would consist of the above-ground and below-ground portions of the pole. The holes left from removing the poles would be backfilled with spoils that may be available as a result of the excavation for new poles and using imported fill as needed.

Top Removal

Top removal at one pole location would be conducted as part of the Proposed Project.

Pole/Tower Installation

Foundation Installation

Lattice Steel Structure

Structure foundations for each LST would consist of four poured-in-place concrete footings. Actual footing diameters and depths for each of the structure foundations would depend on the soil conditions and topography at each site and would be determined during final engineering.

The foundation process begins with the drilling of the holes for each type of structure. The holes would be drilled using truck or track mounted excavators with various diameter augers to match the diameter requirements of the structure type. LSTs typically require four excavated holes approximately 3 to 7 feet in diameter at approximately 30 to 60 feet deep. On average, each footing for an LST structure would protrude approximately 1 to 4 feet above ground level.

The excavated material would be distributed at each structure site, used to backfill excavations from the removal of nearby structures (if any) and/or used in the rehabilitation of existing access roads. Alternatively, the excavated soil may be disposed of at an off-site disposal facility in accordance with applicable laws.

Following excavation of the foundation footings, steel-reinforced rebar cages would be set, survey positioning would be verified, and concrete and stub angles would then be placed. Steel-reinforced rebar cages and stub angles may be assembled at staging yards and delivered to each structure location by flatbed truck or assembled at the job site. Depending upon the type of structure being constructed, soil conditions, and topography at each site, LSTs would require approximately 200 CY of concrete delivered to each structure location.

Slight to severe ground caving is anticipated along the preferred route during the drilling of the LST foundations due to the presence of loose soils. The use of water, fluid stabilizers, drilling mud, and/or casings would be made available to control ground caving and to stabilize the sidewalls from sloughing. If fluid stabilizers are utilized, mud slurry would be added in conjunction with the drilling. The concrete for the foundation is then pumped to the bottom of the hole, displacing the mud slurry. Mud slurry brought to the surface is typically collected in a pit adjacent to the foundation and/or vacuumed directly into a truck to be reused or discarded at an off-site disposal facility in accordance with all applicable laws.

Tubular Steel Pole

Each TSP would require a drilled, poured-in-place, concrete footing that would form the structure foundation. The hole would be drilled using truck or track-mounted excavators with various diameter augers to match the diameter requirements of the structure foundation. Following excavation of the foundation footings, steel-reinforced cages would be set, positioning would be survey-verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility TSP foundations typically require an excavated hole approximately 5 feet to 9 feet in diameter at approximately 30 feet to 60 feet deep. TSPs would require approximately 88 CY of concrete delivered to each structure location.

LST Installation

LSTs would be assembled within the construction areas at each tower site. Structure assembly begins with the hauling and stacking of steel bundles, per engineering drawing requirements, from a staging yard to each structure location. This activity requires use of several trucks with 40-foot trailers and a rough terrain forklift. After steel is delivered and stacked, crews would proceed with assembly of leg extensions, body panels, boxed sections, and the cages/bridges. Assembled sections would be lifted into place with a crane and secured by a combined erection and torquing crew. When the steel work is completed, the construction crew may opt to install insulators and wire rollers (travelers).

TSP Installation

TSPs typically consist of multiple sections. The pole sections would be placed in temporary laydown areas at each pole location. Table 2: Approximate Laydown/Work Area Dimensions describes the approximate laydown dimensions. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or may be configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware. A crane would then be used to set each steel pole base section on top of the previously prepared foundations. If existing terrain around the TSP location is not suitable to support crane activities, a temporary crane pad would be constructed within the laydown area. When the base section is secured, the subsequent section of the TSP would be slipped into place on the base section. The pole sections may also be spot welded together for additional stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure prior to setting the poles.

Wood Pole Installation

No new wood poles would be installed as part of the Proposed Project; however, up to 46 wood poles may need to be replaced for the new telecommunications lines proposed to be installed depending on the results of wind-load testing. Each wood pole would require a hole to be excavated using an auger, backhoe, or hand tools. The wood poles would be placed in temporary laydown areas at each pole location. While on the ground, the wood poles may be configured (if

not reconfigured) with the necessary cross arms, insulators, and wire stringing hardware before being set in place. The wood poles would then be installed in the holes, typically by a line truck with an attached boom. Wood guy stub poles would be installed similarly to wood poles.

Conductor/Cable Installation

Aboveground

Wire stringing activities would be in accordance with SCE common practices and similar to process methods detailed in the IEEE Standard 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*. To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished.

Wire stringing includes all activities associated with the installation of the primary conductors onto transmission line structures. These activities include the installation of conductor, overhead ground wire/overhead optical ground wire, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, and suspension and dead-end hardware assemblies for the entire length of the route.

Below Ground

Following vault and duct bank installation, SCE would pull the electrical cables through the duct banks, splice the cable segments at each vault, and terminate the cables at the transition structures where the subtransmission line would transition from underground to overhead. To pull the cables through the duct banks, a cable reel would be placed at one end of the conduit segment, and a pulling rig would be placed at the opposite end. The cable from the cable reel would be attached to a rope in the duct bank, and the rope linked to the pulling rig, which would pull the rope and the attached cable through the duct banks. A lubricant would be applied as the cable enters the ducts to decrease friction and facilitate travel through the polyvinyl chloride (PVC) conduits. The electrical cables for the 66 kV subtransmission line would typically be pulled through the individual conduits in the duct bank at a rate of two to three segments between vaults per day.

Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings for wire stringing/removal activities. These structures are designed to stop the movement of a conductor should it momentarily drop below a conventional stringing height. SCE estimates that 35 guard structures may need to be constructed along the proposed route.

Typical guard structures are standard wood poles. Depending on the overall spacing of the conductors being installed, approximately two to four guard poles would be required on either side of a crossing. In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place.

For road crossings, SCE would work closely with the applicable jurisdiction to secure the necessary permits to string conductor over the applicable infrastructure.

3.4.3 Transmission Line Construction (Below Ground)

Trenching

Subtransmission Trenching

The Proposed Project includes a total of approximately 5.5 miles of new underground 66 kV subtransmission lines and associated transition and support structures. A trench measuring 24 inches wide and approximately 60 inches deep would be required to place the 66 kV subtransmission line underground. This depth is required to meet the minimum 36 inches of cover above the duct bank. Trenching may be performed by using the following general steps, including but not limited to: mark the location and applicable underground utilities, lay out trench line, saw cut asphalt or concrete pavement as necessary, dig to appropriate depth with a backhoe or similar equipment, and install the new duct bank. Once the duct bank has been installed, the trench would typically be backfilled with a sand slurry mix. Excavated materials would be reused as fill for the Proposed Project and/or be disposed of at an off-site disposal facility in accordance with applicable laws if necessary. Should groundwater be encountered, it would be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

Subtransmission Vault Installation

Installation of each vault would typically take place over a one-week period depending on soil conditions. First, the vault pit would be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base would be placed to cover the entire bottom of the pit, followed by delivery and installation of the vault. Once the vault is set, grade rings and the vault casting would be added and set to match the existing grade. The excavated area would be backfilled with a sand slurry mix to a point just below the top of the vault roof. Excavated materials, if suitable, would be used to backfill the remainder of the excavation and any excess spoils would be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area would be restored as required.

Fiber Optic Installation

New underground conduit and structures would typically be installed with a backhoe. The trench would be excavated to approximately 24 inches wide and a minimum of approximately 36 inches deep. PVC conduit would be placed in the trench and covered with approximately 30 inches of concrete slurry then backfilled and compacted. For manholes and pull boxes, a hole is excavated between approximately 6 to 9 feet deep, 7 to 8 feet long, and 6 to 7 feet wide. The manhole or pull box would be lowered into place, connected to the conduits, and the hole backfilled with concrete slurry.

Trenchless Techniques

Unless alternate methods are required to cross existing facilities or sensitive resources, duct banks would be installed using open-cut trenching techniques. In the event that trenchless techniques are required, SCE would utilize one of the methods described in the following subsections.

Jack-and-Bore

SCE would use the horizontal jack-and-bore construction technique to install the conduit at locations along the underground route where open-cut trenching may not be permitted or may not be otherwise feasible or preferred, such as at railroad and trolley tracks, roads, and drainage channel crossings.

Horizontal boring (jack-and-bore) is an augering operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations would begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits would typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits would be between 10 and 20 feet, depending on the facilities that would be crossed. It is anticipated that between 590 and 1,180 CY of material would be excavated to facilitate each jack-and-bore installation required for the Proposed Project. Following the duct bank installation, the bore pits would be backfilled using native material, and the duct bank would be covered with at least 36 inches of engineered or native fill, as appropriate. Soil not used for backfill would be hauled off site and disposed of at an approved facility.

After establishing the bore pits, boring equipment would be delivered to the site and then installed into the bore pit at the sending end. Jack-and-bore crossings involve pushing or boring a 36- to 42-inch steel casing through the earth and under the obstacle being crossed. Depending on soil conditions, water is often used to lubricate the auger during the boring process. The casings would typically be installed at least 3 to 4 feet below the obstacle, or as required by the relevant permitting agency. Once the casing is in place, the conduit would be installed within the casing by using spacers to hold them in place and then the remaining space would be backfilled with a slurry mix. The casings would be left in place to protect the conduit once it has been installed. An approximately 150-foot by 150-foot temporary construction area would be required at each bore pit location. SCE would secure the necessary permits to conduct these specialized construction activities and would implement standard BMPs, including silt fencing and straw wattles, in accordance with the Proposed Project's SWPPP.

Horizontal Directional Drilling

Horizontal directional drilling (HDD) technology is an underground boring technique that uses hydraulically powered, horizontal drilling equipment. It involves drilling along a vertical arc that passes beneath the intended feature. HDD technology utilizes lubrication containing water and bentonite clay (referred to as drilling mud) to aid the drilling, coat the walls of the bore hole, and maintain the open hole. The HDD technology uses a hydraulically powered horizontal drilling rig supported by a drilling mud tank and a power unit for the hydraulic pumps and mud pumps. A variable-angle drilling unit would initially be adjusted to the proper design angle for the particular drill. A 6- to 8-inch-diameter drill would typically be used.

The first step would be to drill a fluid-filled pilot bore. The first and smallest of the cutting heads would begin the pilot hole at the surveyed entry point. The first section of the drill stem has an articulating joint near the drill-cutting head that the HDD operator can control. Successive drill stem sections would be added as the drill head bores under the crossing. The drill head would then be articulated slightly by the operator to follow a designed path under the crossing and climb upward toward the exit point. Once the pilot hole is completed, a succession of larger

cutting heads and reamers would be pulled and pushed through the bore hole until it is the appropriate size for the steel casing. Once the steel casing is in place ducts would be installed within the steel casing using spacers to maintain needed separation and then the remaining space would be backfilled with a slurry mix.

During the HDD process, the underground cable to be pulled through the crossing would be strung on cable supports down the ROW or within temporary extra workspace areas.

As part of the drilling design process, geotechnical surveys of subsurface conditions would be conducted to determine the underlying geologic strata along the bore path. Infrequently, the geologic strata above the bore may be weaker than anticipated and/or unconsolidated. As the HDD passes under these locations, the high pressure of the drilling mud may result in a fracture of these strata, allowing drilling mud to rise to the surface. This situation is termed a "frac-out" and is usually resolved by reducing the mud system pressure or increasing the mud viscosity. If a frac-out occurs, the boring operation would be stopped immediately, and a frac-out contingency plan would be implemented to contain and remove the drilling mud.

3.4.4 Equipment Description

Table 5: Construction Equipment Description lists the equipment SCE expects to use during construction and a brief description of the use of that equipment.

3.4.5 Construction Schedule

SCE anticipates that construction of the Proposed Project would take approximately 55 months, as shown in Table 6: Proposed Construction Schedule.[4] Construction would commence following CPUC approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

3.4.6 Energizing Transmission and Subtransmission Lines

Energizing the new lines is the final step in completing the transmission and subtransmission construction. The existing transmission, subtransmission, and distribution lines would be de-energized in order to connect the new line segments to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing lines may occur at night when electrical demand is low.

4 – REGULATORY FRAMEWORK

The following subsections provide a description of the regulatory framework protecting special-status plant and wildlife species, as well as aquatic resources.

[4] The proposed construction schedule does not account for unforeseen Proposed Project delays, including but not limited to those due to inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds).

Table 5: Construction Equipment Description

Equipment Type	Use Description
Bucket Truck	Lift and transport workers
Survey Truck	Transport survey crew
Dozer	Grade pads and access roads
Loader	Move or load materials
Scraper	Grade pads and access roads
Grader	Grade substation site, pads, and access roads; ROW clearing; and restoration
Water Truck	Suppress dust
Haul Truck	Transport impact/export material
Bobcat	Excavate, move, and load materials
Foundation Auger	Drilling foundation holes
Backhoe	Excavate and load materials
Dump Truck	Transport import/export material
Bobcat Skid Steer	Move materials
Forklift	Lift and move materials
Crane	Lift and place materials
Generator	Provide power to the work area
Scissor Lift	Provide access to elevated work areas
Manlift	Set steel and install equipment
Flatbed Truck	Deliver poles and hardware
Concrete Pump Truck	Deliver and pour concrete
Asphalt Paver	Pave access roads
Tractor	Hauling materials
Helicopter	Conductor installation activities

Table 6: Proposed Construction Schedule

Proposed Project Activity	Approximate Duration (Months)	Approximate Start Date
Permit to Construct	12	March 1, 2015
Final Engineering	36	September 15, 2014
ROW/Property Acquisition	11	December 15, 2014
Acquisition of Required Permits	12	March 1, 2015
Substation Construction	55	April 11, 2016
Transmission Line Construction	48	April 18, 2016
Subtransmission Line Construction	36	April 18, 2016
Telecommunications Construction	48	April 18, 2016
Distribution Construction	36	April 18, 2016
Cleanup	4	August 1, 2020
Project Operational	N/A	December 31, 2020

4.0 SPECIAL-STATUS PLANTS

4.0.0 Definitions

Special-Status Plant Species

Special-status plant species are defined as follows:

- Plants that are listed or proposed for listing as threatened or endangered under the California Endangered Species Act (CESA) or the federal Endangered Species Act (FESA).

- Plants that are candidates for possible future listing as threatened or endangered under the CESA and FESA.

- Species that meet the definition of rare or endangered under Sections 15380(b) and (d) of the California Environmental Quality Act (CEQA). Species that may meet the definition of rare or endangered include the following:

  - species considered by the California Native Plant Society (CNPS) to be “rare, threatened or endangered in California” (California Rare Plant Rank [CRPR] 1A, 1B, and 2);

  - species that may warrant consideration on the basis of local significance or recent biological information; and

  - some species included on the California Natural Diversity Database (CNDDB) Special Plants, Bryophytes, and Lichens List;

- Species considered to be locally significant species; that is, a species that is not rare from a statewide perspective, but is rare or uncommon in a local context, such as within a county or region (CEQA § 15125 [c]), or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).

- Species considered to be CNPS CRPR 3 and 4 species are also included for the purpose of this BRTR.

4.0.1 Relevant Regulations

Federal

Federal Endangered Species Act

A plant species listed as threatened or endangered under the FESA is protected from unauthorized "take" of that species when located on federal land or when a federal agency is consulting with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the FESA on protected wildlife species. Take can also be issued under Section 10 of the FESA. The definition of "take" includes to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct" (16 U.S. Code [U.S.C.] 1531). If it is necessary to take a federally listed endangered or threatened species as part of an otherwise lawful activity, it may be necessary to receive permission from the USFWS prior to initiating the take.

State

California Fish and Game Code

State Endangered Species Act

A plant species listed as threatened or endangered under the CESA (California Fish and Game Code § 2050) is protected from unauthorized "take." "Take" is defined in Section 86 of the California Fish and Game Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." If it is necessary to "take" a state-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the California Department of Fish and Wildlife (CDFW) prior to initiating the "take." Section 2081 allows take of a listed species for educational, scientific, or population-management purposes. Project proponents consult with the CDFW to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, and funding of implementation and monitoring of mitigation measures.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (California Fish and Game Code, §§ 1900 through 1913) directed the CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. When the CESA was passed in 1984, it expanded on the original Native Plant Protection Act and enhanced legal protection for plants and created

the categories of "threatened" and "endangered" species to parallel the FESA. The CESA converted all rare animals to threatened species under the Native Plant Protection Act, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

CDFW generally regards as rare many plant species included on California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project. Section 1913(b) includes a specific provision to allow for the incidental removal of endangered or rare plant species, if not otherwise salvaged by CDFW, within a right-of-way to allow a public utility to fulfill its obligation to provide service to the public.

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. In addition to federally or state-listed species, special-status plants receive consideration under CEQA.

Local

The CPUC has sole and exclusive state jurisdiction over the siting and design of the Proposed Project. Pursuant to CPUC G.O. 131-D, Section XIV.B, "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC's jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as they do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local biological resources regulations is provided for informational purposes only.

The following were reviewed for relevant biological resources regulations:

- the County of Los Angeles General Plan,
- the City of Monterey Park General Plan and Municipal Code,
- the City of Montebello General Plan and Municipal Code,
- the City of Rosemead General Plan,
- the City of South El Monte General Plan,
- the City of Commerce General Plan,
- the City of Bell Gardens General Plan, and
- the City of Pasadena General Plan and Municipal Code.

County of Los Angeles General Plan

The County of Los Angeles General Plan was reviewed for relevant goals and policies related to biological resources. The following goals and policies are contained in the Conservation and Open Space Element of the plan:

Goals

- To conserve energy resources and develop alternative energy sources
- To conserve water and protect water quality
- To preserve and protect prime agricultural lands, forests, fisheries, significant ecological areas and other biotic resources
- To preserve and protect sites of historical, archaeological, scenic and scientific value

Policies

- Policy 7: Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation and enhancement

- Policy 12: Protect watershed, streams, and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats, and aid in ground water recharge

Significant Ecological Areas

The County of Los Angeles General Plan describes significant ecological areas (SEAs) as lands having important biological resources. This classification includes habitats of rare and endangered species, sites with critical fish and wildlife, relatively undisturbed areas of typical natural habitat, and regionally scarce biotic resources.

County of Los Angeles Municipal Code

Chapter 22.56, Oak Tree Permit (Ord. 88-0157 § 1), of the County of Los Angeles Municipal Code was designed to preserve and maintain healthy oak trees in the development process. The Oak Tree Ordinance prohibits the cutting, destruction, removal, relocation, damage, or encroachment on (i.e., into the protected zone) of any oak tree more than 8 inches in diameter or 25 inches or greater in circumference. Oak trees with one or more trunks with a combined diameter of 12 inches or a circumference measuring 38 inches or greater are also protected under this ordinance. Damage is defined by the Oak Tree Ordinance as any act with the potential to cause injury to any parts of a tree, including, but not limited to, burning, the application of toxic substances, the operation of equipment or machinery, changing the natural grade, or trenching or excavating within the protected zone of an oak tree. The protected zone refers to the area within the dripline of a tree and extending to a point at least 5 feet outside of the dripline, or 15 feet from the trunks of the tree, whichever distance is greater. A county permit with an accompanying oak tree report is required in order to remove or relocate oak trees protected under the Oak Tree Ordinance. Removed oak trees must be replaced at a ratio of at least 2 to 1 with native oak trees of at least a 15-gallon size and measuring at least 1 inch in diameter at 1 foot above the base. Replacement trees must be maintained for two years and replaced if mortality occurs.

Chapter 12.28, the Brushing Ordinance (Ord. 9106 § 1), of the County of Los Angeles Municipal Code protects natural vegetation—which includes native plants, grasses, shrubs, and trees and roots—with the ability to intercept, hold, and more slowly release rainfall than bare earth surfaces. The Brushing Ordinance requires a permit for the removal or destruction of natural vegetation on any ground surface with a grade of 8 percent or higher. To obtain a permit for the removal or destruction of natural vegetation within Los Angeles County, a written request is required and must include a description of the property; a map of the topography of the land and location of any drainage courses; the location and extent of proposed work; and details of the erosion, flood hazards, and drainage plans. The county engineer may include conditions for the permit, including seasonal limitations on vegetation removal or destruction, requirements for protective structures or erosion control devices, and restoration of native vegetation in impacted areas.

City of Monterey Park General Plan

The City of Monterey Park General Plan and the Addendum to City of Monterey Park General Plan Final Environmental Impact Report (FEIR) were both reviewed for relevant goals and policies related to biological resources. The documents do not list goals or policies related to biological resources, and the Addendum to the City of Monterey Park General Plan FEIR states that no biological resources or habitat areas occur within the City of Monterey Park. Therefore, no local regulations relating to biological resources apply in the City of Monterey Park.

City of Montebello General Plan

The Conservation Element of the City of Montebello General Plan was reviewed for relevant goals and policies related to biological resources. The General Plan stated that the purpose of the conservation element is to comply with California law. Goals listed in the plan include the preservation of habitat for desirable or non-objectionable birds and mammals, as well as the preservation of outstanding and unique plant life in the community.

City of Rosemead General Plan

The Resource Management Element of the City of Rosemead General Plan addresses the protection of the limited natural resource within the city limits, including recreation areas, water supply resources, air quality improvement, and energy conservation.

City of South El Monte

South El Monte General Plan

The Resources Element of the City of South El Monte General Plan addresses resource conservation within the city, including the provision of park space, water conservation, protection of drinking water, and improvement of air quality.

City of South El Monte Tree Policy

The city has adopted a tree policy includes the following provisions related to tree removal and tree planting:

- Street trees shall be selected from the city's Approved Tree List
- All trees will be planted in a minimum 24-inch box

- All trees scheduled for planting must be coordinated with the city's Landscape Maintenance Supervisor
- Every effort should be made to keep tree removal at a minimum; if trees are removed, every effort should be made to replace them with trees from the Approved Tree List
- No tree will be removed with prior approval of the General Services Director

City of Commerce General Plan

The Resource Management Element of the City of Commerce General Plan addresses the protection of natural resources within the city limits. The plan contains the following goal and policies:

Goal

- To preserve those resources and amenities that enhance Commerce's living and working environment

Policies

- Policy 1.1 – The City of Commerce will do its part in the conservation and protection of air, water, energy, and land in the Southern California region
- Policy 4.1 – The City of Commerce will encourage the preservation of the existing plant resources in the city
- Policy 6.3 – The City of Commerce will continue to monitor development efforts that could affect the resources that are of importance to the community

City of Bell Gardens General Plan

The Conservation Element of the City of Bell Gardens General Plan addresses the protection of natural resources within the city limits. The plan contains policies that protect groundwater and other ecological resources through programs listed in other sections of the plan.

City of Pasadena General Plan

The City of Pasadena General Plan was reviewed for relevant goals and policies related to biological resources. The following goals and policies are contained in the Open Space and Conservation Element and the Green Space, Parks, and Recreation Element of the General Plan:

Goals

- Preserve, acquire, and create open space
- Protect and conserve natural open spaces, critical habitats, and natural resources
- Protect, restore, and maintain native wildlife and areas containing important native vegetation resources in the city
- Protect important open space and habitat linkages
- Protect and enhance Pasadena's trees on public and privately owned land
- Establish Pasadena as a national and international leader on energy and water conservation and environmental stewardship efforts
- Encourage and promote the stewardship of Pasadena's natural environment, including water conservation, clean air, natural open space protection, and recycling

Policies

- Policy 1.2: Protect natural open areas, watersheds, and environmentally sensitive areas such as Hahamongna, Eaton Canyon, riparian areas, and other open spaces

- Policy 1.5: Restore, protect, and enhance wildlife habitat within critical open space areas and any wildlife corridors and/or linkages

- Policy 1.6: Continue to protect the City's legacy of a lush and varied urban forest. Continue to plant street trees as per the City's Master Street Tree Plan and continue to maintain and protect the urban forest as a vital local resource

- Policy 1.8: Conserve and protect water resources in parks and open spaces; maximize the quality and quantity of groundwater recharge to minimize the dependence on imported water

City of Pasadena Municipal Code

Chapter 8.52 City Tree and Tree Protection Ordinance (Ordinance 6896§ 2 (part), 2002) of the City of Pasadena Municipal Code contains measures to accomplish the following:

- Preserve and grow the City of Pasadena's canopy cover by protecting landmark, native, and specimen trees on specified areas of private property;
- Expand the protection of street trees and trees on public property;
- Safeguard the City of Pasadena's urban forest by providing for the regulation of the protection, planting, and maintenance and removal of trees in the city;
- Protect the visual and aesthetic character of the many areas of the City of Pasadena;
- Protect and maintain healthy trees in the land use planning processes;
- Create favorable conditions for the protection on designated landmark, native, and specimen trees for the benefit of current and future residents of the City of Pasadena; and
- Improve the quality of life for residents, visitors, and wildlife.

The City Tree and Tree Protection Ordinance protects all native, specimen, landmark, landmark-eligible, or mature trees in the City of Pasadena. Specifically, the ordinance seeks to avoid mechanical injury to tree roots, trunks, or branches; the compaction of soil; and changes to existing grade, which may expose or suffocate roots. Construction projects that would affect native, specimen, landmark, landmark-eligible, or mature trees require the submittal of a tree protection plan for review and approval.

The term "native tree," as defined by this ordinance, means any tree with a trunk more than 8 inches in diameter at a height of 4.5 feet above natural grade. Native trees include coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), canyon live oak (*Quercus chrysolepis*), California sycamore (*Platanus racemosa*), California black walnut, scrub oak (*Quercus berberidifolia*), valley oak (*Quercus lobata*), Fremont's cottonwood (*Populus fremontii*), California alder (*Alnus rhombifolia*), black cottonwood (*Populus trichocarpa*), arroyo willow (*Salix lasiolepis*), and California buckeye (*Aesculus californica*).

The term “specimen” is defined as a tree meeting the criteria established by resolution of the city council for species and size of tree, which is thereby presumed to possess distinctive form, size, or age and to be an outstanding specimen of a desirable species. A “landmark tree” is defined as a tree of historic or cultural significance and of importance to the community, such as it is one of the largest or oldest trees of the species in the city; it has historical significance due to an association with a historic building, site, street, person, or event; or it is a defining landmark or significant outstanding feature of a neighborhood. A “landmark-eligible” tree is defined as a tree that meets the criteria for designation as a landmark tree, as determined by the review authority. A mature tree is defined as an otherwise non-protected tree with a diameter at breast height of 19 inches or greater.

Requests for a permit to remove a landmark, native and specimen tree will be denied unless one of the following findings is made:

- There is a public benefit, or a public health, safety, or welfare benefit, to the injury or removal that outweighs the protection of the specific tree (public benefit means a public purpose, service, or use which affects residents as a community and not merely as particular individuals); or
- The present condition of the tree is such that it is not reasonably likely to survive; or
- There is an objective feature of the tree that makes the tree not suitable for protection; or
- There would be a substantial hardship to a private property owner in the enjoyment and use of real property if the injury or removal is not permitted; or
- To not permit the injury or removal would constitute a taking of the underlying real property; or
- The project includes a landscape design plan that will result in a tree canopy coverage of greater significance than the tree canopy coverage being removed, within a reasonable time after completion of the project.

No permit is required to prune non-protected trees, specimen trees or native trees on private property. Pruning of a designated landmark tree requires a permit and the pruning work must be done according to the most recent standards of the International Society of Arboriculture.

4.1 SPECIAL-STATUS WILDLIFE

4.1.0 Special-Status Wildlife Species Definitions

For purposes of this analysis, special-status wildlife are legally protected under the CESA and FESA or other regulations, and species that are considered rare by the scientific community. Special-status species are defined as follows:

- animals that are listed or proposed for listing as threatened or endangered under the CESA (California Fish and Game Code § 2050 et seq.; 14 California Code of Regulations

[CCR] § 670.1 et seq.) or the FESA (50 CFR § 17.12 for plants; 50 CFR 17.11 for animals; and various notices in the Federal Register for proposed species);

- animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR § 17; Federal Register Vol. 64, No. 205, pages 57533-57547, October 25, 1999) and under the CESA (California Fish and Game Code § 2068);
- animals that meet the definition of endangered, rare, or threatened under CEQA (14 CCR § 15380) that may include species not found on either federal or state endangered species lists;
- migratory birds and any of their parts, eggs, and nests, as protected by the Migratory Bird Treaty Act (MBTA);
- migratory, non-game birds of management concern listed by the USFWS;
- birds of prey (California Fish and Game Code §§ 3503, 3503.5, 3513, and 3800);
- animals that are designated as "Species of Special Concern" (SSC) by the CDFW; and
- animal species that are "fully protected" in California (California Fish and Game Code §§ 3511, 4700, 5050, and 5515).

4.1.1 Relevant Regulations

Federal

Federal Endangered Species Act

A species listed as threatened or endangered under the FESA is protected from unauthorized "take" of that species. If it is necessary to take a federally listed endangered or threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the USFWS prior to initiating the take. Under Section 7 of FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its critical habitat must consult with the USFWS.

Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act (BGEPA), passed in 1940 to protect the bald eagle and amended in 1962 to include the golden eagle (16 U.S.C. 668a–d). The BGEPA (16 U.S.C. 668-668d) prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by the USFWS. The definition of "take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA prohibits any form of possession or take of either eagle species, and imposes criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute.

Regarding its prohibitions on possession, the statute exempts the use of eagles or eagle parts for exhibition, scientific, and Native American religious uses.

Migratory Bird Treaty Act

The MBTA implements international treaties between the U.S. and other nations that protect migratory birds (including their eggs and nests) from killing, hunting, pursuing, capturing, selling, and shipping, unless expressly authorized or permitted.

State

California Fish and Game Code

State Endangered Species Act

As discussed previously, a species listed as threatened or endangered under the CESA (California Fish and Game Code § 2050) is protected from unauthorized take of that species. If it is necessary to take a state-listed threatened species as part of an otherwise lawful activity, it would be necessary to receive permission from the CDFW prior to initiating the take. Section 2081 allows take of a listed species for educational, scientific, or population-management purposes.

Resident and Migratory Birds

Sections 3503, 3503.5, 3513, and 3800 of the California Fish and Game Code affords protection over the destruction of nests or eggs of native bird species, and it states that no birds in the orders of *Falconiformes* or *Strigiformes* (i.e., birds of prey) can be taken, possessed, or destroyed.

Fully Protected Species

According to Sections 3511 and 4700 of the California Fish and Game Code—which regulate birds and mammals, respectively—a Fully Protected species may not be taken or possessed and incidental take of these species is not authorized. The CDFW cannot issue permits or licenses that authorize the take of any Fully Protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (§ 3511).

California Environmental Quality Act

As discussed previously, CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. In addition to federally or state-listed listed species, special-status animals receive consideration under CEQA. Special-status species include wildlife SSC listed by the CDFW. Pursuant to the CEQA Guidelines (14 CCR § 15380), some SSC could be considered "rare." Any unmitigated impacts to rare species could be considered a "significant effect on the environment" (14 CFR § 15382). Thus, SSC must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

4.2 WETLAND AND AQUATIC RESOURCES

Hydrologic features located within or near the Proposed Project area may fall under the jurisdiction of federal and/or state agencies that regulate impacts to hydrologic resources. The subsections that follow provide descriptions of the regulatory oversight associated with the hydrologic features that are located within and near the Proposed Project area.

4.2.0 Relevant Regulations

Federal

Clean Water Act

The purpose of the Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of fill material into waters of the U.S. without a permit from the USACE. The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions," according to Title 33, Section 328.3(b) of the CFR. The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit.

A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions. Under Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity that may result in any discharge into navigable waters must provide the licensing or permitting agency with a certification that the discharge will comply with the applicable CWA provisions, as stated in Title 33, Section 1341 of the U.S.C.

The National Pollution Discharge Elimination System (NPDES) program was established in 1972 to control discharges of pollutants from defined point sources (33 U.S.C. § 1342). The program originally focused on industrial-process wastewater and publicly owned treatment works. In 1987, Section 402 of the CWA was amended to include requirements for five separate categories of storm water discharges, known as Phase I facilities.

The U.S. EPA issued a final rule for Phase II discharges in August 1995. Phase II storm water discharges include light industrial facilities, small construction sites (less than 5 acres), and small municipalities (populations of less than 100,000).

In California, NPDES permitting authority is delegated to the State Water Resources Control Board (SWRCB) and administered by the nine RWQCBs. Dischargers with projects that disturb 1 or more acres of soil are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activity (General Permit) (Water Quality Order 99-08-DWQ). On August 19, 1999, the SWRCB reissued the General Permit and later that year amended the permit to apply to sites as small as 1 acre. On September 2, 2009, the SWRCB adopted Order No. 2009-0009-DWQ (General Construction Permit), which reissued Order 99-08-DWQ for projects disturbing 1 or more acre of land, or that are part of a common plan of development or sale that disturbs more than 1 acre of land. The new permit became effective

July 1, 2010, and all existing dischargers and new dischargers are required to obtain coverage under the new permit by submitting Permit Registration Documents, which include a SWPPP.

State

California Fish and Game Code Section 1600

Sections 1601 through 1606 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement Application be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Lake or Streambed Alteration Agreement.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (Water Code § 13000, et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect waters of the State. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Individual water quality control plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. Waste discharge requirements and waivers are mechanisms used by the RWQCBs to control discharges and protect water quality.

5 – METHODOLOGY

Biological resources data for the Proposed Project area were obtained through a literature review of reference materials, including background documents, manuals and guides of California plants, birds, and mammals. In addition, field visits—including reconnaissance-level general biological surveys, wetland delineations, and a verification of previous wetland delineations conducted in accordance with all pertinent regulatory guidelines—were conducted to assess biological resources in the Proposed Project area. The reference materials and plans consulted are further described in Section 5.0 Literature Search, and additional information regarding survey methodology and the wetland delineation is provided in Section 5.1 Survey Methodology.

5.0 LITERATURE SEARCH

Preliminary investigations included a study of aerial photographs, U.S. Geological Survey (USGS) topographic maps, USFWS National Wetland Inventory maps (USFWS 2014b), and literature and database searches, as described further in the subsections that follow.

5.0.0 Review of Applicable Plans

The following local government and agency plans were reviewed to determine plans that are relevant to the Proposed Project activities or the Proposed Project area:

- County of Los Angeles General Plan (County of Los Angeles 2014)

- City of Bell Gardens General Plan (City of Bell Gardens 1995),
- City of Commerce General Plan (City of Commerce 2008),
- City of South El Monte General Plan (City of South El Monte 2000),
- City of Montebello General Plan (City of Montebello 1973),
- City of Montebello Municipal Code (City of Montebello 2014),
- City of Monterey Park General Plan (City of Monterey Park 2001
- City of Monterey Park Municipal Code (City of Monterey Park 2014),
- City of Rosemead General Plan (City of Rosemead 2010), City of Pasadena General Plan (City of Pasadena 2004), and City of Pasadena Municipal Code (City of Pasadena 2004).

No additional local government plans that apply to the Proposed Project area were identified.

5.0.1 Review of Applicable Background Documents

The Proposed Project area overlaps with Segments 7, 8, and 11 of the TRTP. As a result, the following biological documents produced for the TRTP were reviewed:

- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 7 and 8*;
- *Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 6 and 11*;
- *Tehachapi Renewable Transmission Project Segment 11A Goodrich to Mesa Transmission Line Jurisdictional Delineation and Impact Analysis Report;*
- *Tehachapi Renewable Transmission Project Biological Assessment*;
- *Formal Section 7 Consultation on the Tehachapi Renewable Transmission Project, Angeles National Forest, California*;
- *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*;
- *Biological Technical Report for the Southern California Edison Tehachapi Renewable Transmission Project Segments 6, 7, 8, and 11: Volume I of II*;
- *Biological Resources section of the Proponent's Environmental Assessment for the Tehachapi Renewables Transmission Project*;
- *Final Environmental Impact Report, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*;
- *Final Environmental Impact Statement, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*;
- *Southern California Edison's Tehachapi Renewables Transmission Project Supplemental Final Environmental Impact Report/Environmental Impact Statement*;

- *2009 Final Special-Status Plant Species Survey Report for the Southern California Edison Tehachapi Renewables Transmission Project Segments 7 and 8*;
- *2010 Focused Survey Report for Special-Status Plants Segments 7 and 8*;
- *Preconstruction Biological Survey and Clearance Sweep Report for Southern California Edison's WP3 Transmission Line Work Segment 7 Transmission Line (M40-T1, M42-T6, WSS 7-7.62, WSS 7-7.63, WSS 7-7.64, WSS 7-7.75), and 66kV Relocation (4774404E to 4774410E, M7-T1) Los Angeles County, California*;
- *Tree Inventory Report for Segments 7 and 8*;
- *2010 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8*;
- *2011 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8*;
- *2009 Focused Survey Report for Burrowing Owl, Segments 6 and 11*;
- *2009 Focused Survey Report for Burrowing Owl, Segments 7 and 8*;
- *2010 Focused Survey Report for Burrowing Owl, Segments 6 and 11*; and
- *2010 Focused Survey Report for Burrowing Owl, Segments 7 and 8.*

5.0.2 Special-Status Species Records

A literature and database search, including a geographic information system review of the CNDDB (CNDDB 2014) maintained by the CDFW was conducted for all USGS 7.5-minute quadrangles surrounding or spanned by the Proposed Project.[5] Two CNDDB queries were performed; one query centered on Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications work; and the other query centered on Goodrich Substation site. The CNPS Inventory of Rare and Endangered Plants (CNPS 2014) was accessed online to obtain additional information regarding sensitive plant species. The USFWS Information, Planning, and Conservation System (USFWS 2011) was queried for a list of threatened and endangered species known to occur within or near the Proposed Project area. Records for all known special-status plants and animals within 0.25 mile, 1 mile, and 5 miles of the Proposed Project were compiled and reviewed.

[5] The 7.5-minute quadrangle search was conducted for the Azusa, Mt. Wilson, Pasadena, Baldwin Park, El Monte, Los Angeles, La Habra, Whittier, and South Gate quadrangles.

Special-Status Species' Potential to Occur

Special-Status Plant and Wildlife

The potential for special-status plant and wildlife species to occur within or near the Proposed Project area was determined using information from the literature and database searches and the habitat assessment surveys. The following criteria were used to determine the potential for special-status species to occur within the Proposed Project area:

- Present: The species or its sign (e.g., scat, tracks, or feathers) was observed in the Proposed Project area during field surveys.

- High Potential: The Proposed Project area is located within the range of the species; suitable habitat is present in the Proposed Project area; and the species has been frequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences have been reported within 1 mile of the Proposed Project area.

- Moderate Potential: The Proposed Project area is located within the range of the species; suitable habitat is present in the Proposed Project area; and the species has been infrequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences have been reported within 5 miles of the Proposed Project area.

- Low Potential: The Proposed Project area is located within the range of the species; poor to marginal habitat is present in the Proposed Project area; and the species has been infrequently observed in the Proposed Project area based on literature, or recent CNDDB occurrences of the species have been recorded within 5 miles of the Proposed Project area.

- No Potential: The Proposed Project area is located outside of the range of the species; no habitat for the species exists in the Proposed Project area; and the species has been sporadically observed in the Proposed Project area based on literature, or no recent CNDDB occurrences for this species have been recorded within 5 miles of the Proposed Project area. Alternatively, any CNDDB occurrences recorded within 5 miles of the Proposed Project are now extirpated.

5.0.3 Critical Habitat

Critical habitat designations provided by the USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) were reviewed to identify any designated critical habitat located in the Proposed Project area. In addition, background information, including scientific papers and agency documents—such as 5-year reviews, habitat conservation plans (HCPs), and survey protocols—were reviewed in order to further identify sensitive species with the potential to occur in the Proposed Project area.

5.0.4 Habitat Conservation Plans/Natural Community Conservation Plans

The USFWS Conservation Plans and Agreements Database (USFWS 2013) was reviewed to determine whether any active HCPs are crossed by the Proposed Project. The CDFW Natural

Community Conservation Planning (NCCP) program (CDFW 2013) was also reviewed to determine whether the Proposed Project crosses any active NCCPs.

5.0.5 Vegetation Communities

Plant community descriptions and their locations within the TRTP survey boundaries were taken from the TRTP analysis provided in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*. Vegetation communities were added or revised by Insignia following surveys. The majority of the plant communities were characterized according to R.F. Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The remaining plant communities were characterized by TRTP or by Insignia, as further detailed in the vegetation community descriptions that follow.

5.1 SURVEY METHODOLOGY

5.1.0 General Biological Surveys

Insignia Environmental (Insignia) biologists Isabelle de Geofroy and Lauren Huff conducted a survey of the entire Mesa Substation site on June 3 and 4, 2014. Lauren Huff conducted a survey of the entire Goodrich Substation site on June 18, 2014. The purpose of these surveys was to verify the vegetation communities identified for the TRTP and to document any additional vegetation communities in the Proposed Project area. Insignia biologists Isabelle de Geofroy and Christina Sousa conducted a survey of the Proposed Project area on December 15 through 18, 2014. The biologists walked the entire Proposed Project area and looked for evidence of special-status species and documented any wildlife and plant species observed on site. Representative photographs were taken of vegetation communities observed in the Proposed Project area, as provided in Attachment A: Representative Photographs.

5.1.1 Protocol-Level California Coastal Gnatcatcher Surveys and Habitat Assessment

In 2010 and 2011, focused coastal California gnatcatcher (*Polioptila californica californica*) surveys were conducted for Segments 7 and 8 of the TRTP, in accordance with the USFWS (1997) protocol. ICF International (ICF) biologists with a 10(a)(1)(A) permit for coastal California gnatcatchers conducted surveys for this species from April 17 to June 30, 2010 and from April 6 to June 29, 2011. In 2010, the biologists were authorized by the USFWS to conduct focused protocol-level breeding surveys in 15 areas with potentially suitable habitat for the coastal California gnatcatcher. Given the potential for gnatcatcher, Rocks Biological Consulting (RBC) biologists with a 10(a)(1)(A) permit for coastal California gnatcatchers conducted a habitat assessment for the species in the entire Proposed Project area in October and December 2014.

In 2011, the USFWS authorized surveys in 21 areas. Survey areas with potentially suitable habitat were identified as having either coastal sage (*Artemisia californica*) scrub or Riversidean alluvial fan sage scrub located within 500 feet of the TRTP and/or SCE ROW or access roads. Per the USFWS (1997) protocol, an approximately 80-acre subarea was used to demarcate survey areas so that one surveyor could reasonably complete the survey within the required 1-day period. A minimum of six survey visits were conducted at least 1 week apart. Survey visits were conducted between 6:00 a.m. and 12:00 p.m. and avoided periods of excessive or abnormal heat, wind, rain, fog, or other inclement weather. Each subarea within the survey areas was traversed by walking

meandering transects. Transects ran a course so that 100 percent of the subarea was covered during each of the six visits. The surveys included slow walking with frequent stops to look and listen.

If coastal California gnatcatchers were not detected after a few minutes, the broadcasting of a taped coastal California gnatcatcher vocalization was initiated. Taped vocalizations were broadcasted in all survey areas at distance intervals of 75 to 100 feet. Once one or more coastal California gnatcatchers elicited a response to a broadcasted vocalization, the tape playback was immediately stopped and did not continue until the biologist was far enough to not affect that individual (or multiple birds) with the recording again. The location of detected coastal California gnatcatchers was recorded using a Global Positioning System (GPS) unit. The GPS device used most regularly during these surveys was the Yuma model by Trimble, but recreational grade models by Garmin were also used on occasion. If visually confirmed, the sex and estimated age (i.e., adult, nestling, or fledgling) was recorded. Exhibited behavior (e.g., territorial, nest building, incubating, feeding nestlings, or feeding fledglings) was also recorded. If time allowed, detected coastal California gnatcatchers were watched for several minutes and additional points were recorded to further document the locations where individuals, pairs, or family groups were observed within a territory. All wildlife species observed during the 2010 and 2011 surveys were recorded in field notes for each of the survey areas.

In 2014, RBC biologists conducted a habitat assessment; suitable coastal California gnatcatcher habitat contained the following constituent elements:

- Coastal sage scrub with greater than 50-percent cover, consisting of species such as California sagebrush and/or California buckwheat; or

- Areas consisting of a matrix of sparse, scattered coastal sage scrub shrubs and annual/biennial vegetation with sufficient morphological structure and density to support coastal California gnatcatcher nesting and provide foraging opportunities.

Areas consisting only of annual/biennial plants without sufficient shrub cover were considered not suitable for California gnatcatcher. The coastal California gnatcatcher could fly into these areas as part of its daily activities, but these vegetation patches were not considered suitable or essential for use by California gnatcatcher under this assessment. RBC biologists mapped suitable nesting and foraging habitat within the Proposed Project area.

5.1.2 Focused Burrowing Owl Surveys

In 2009 and 2010, focused surveys for burrowing owl (*Athene cunicularia*) were conducted for Segments 6, 7, 8, and 11 of the TRTP in accordance with the established protocol for this species (CDFW 1995). AMEC Earth & Environmental, Inc. (AMEC) biologists conducted the surveys within the following timeframes:

- August 2 to 3, 2009;
- August 5 to 6, 2009;
- August 11 to 13, 2009;
- August 17 to 21, 2009;
- August 24 to 28, 2009; and

- August 30 to 31, 2009.

ICF's biologists and subconsultants—BonTerra Consulting (BonTerra), ECORP Consulting, Inc., Dudek, and Bloom Biological—conducted focused surveys on the following dates:

- March 29 to April 2, 2010;
- April 6 to 7, 2010;
- April 12 to 13, 2010;
- April 23, 2010;
- April 26 to 29, 2010;
- May 24 to 28, 2010;
- June 1 to 4, 2010;
- June 7 to 18, 2010;
- June 22, 2010;
- June 24 to 25, 2010;
- June 30, 2010;
- July 2, 2010;
- July 8 to 10, 2010; and
- July 12 to 14, 2010.

Prior to the focused burrowing owl surveys, suitable habitat was assessed for potential burrowing owl burrows (i.e., any burrow or crevasse a burrowing owl could occupy). Potential burrows in this area were marked with a GPS unit. During the focused surveys, potential burrows were checked for any sign of recent owl occupation (i.e., whitewash, pellets/castings, feathers, etc.). Binoculars were used to search for and identify species on site.

5.1.3 Special-Status Bat Species Surveys

Reconnaissance-level surveys of habitats capable of supporting roosts for special-status bat species were conducted by Aspen Environmental Group (Aspen) for the TRTP between September 17 and 21, 2007; September 25 and 28, 2007; and July 14 and 15, 2008. Field surveys were conducted at approximately 87 locations throughout the TRTP. Habitats capable of supporting roosts were evaluated in the field by searching for structures, including cavities, crevices, and cracks in trees, fractured rocks (including caves and mines), cliffs, and human structures (e.g., buildings, bridges, and dams).

5.1.4 Rare Plant Surveys

Focused botanical surveys of the TRTP were conducted by Aspen and H.T. Harvey and Associates from June to December 2007. Additional focused surveys were conducted by Aspen and H.T. Harvey and Associates during February to July 2008. The purpose of the 2007 and 2008 surveys was to verify data compiled from previous surveys conducted by SCE in 2007, to document and evaluate the vegetation types present, and to determine the potential occurrence of special-status and invasive plants. Plant taxa were identified to the lowest taxonomic level possible using a variety of taxonomic keys, including *The Jepson Manual* (Hickman 1993) and *A Flora of Southern California* (Munz 1974). The scientific names for all plant taxa are reported using the nomenclature of Hickman (1993). Due to scheduling constraints, the 2007 focused

botanical surveys of the TRTP were conducted outside of the blooming period for the majority of the special-status plants in the area. Furthermore, rainfall totals for the 2006-2007 growing season were among the lowest on record in Southern California (National Weather Service [NWS] 2007), resulting in conditions that were very poor for the detection of many plant species, especially annuals. Therefore, the TRTP was surveyed for habitat capable of supporting these species based on factors such as soil type, disturbance regime, species composition of native vegetation, and known records in the vicinity of the TRTP.

In 2009, additional botanical surveys were conducted in Segments 7 and 8 of the TRTP in accordance with the CDFW *Guidelines for Assessing the Effects of the Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFW 2006) and the *CNPS Botanical Survey Guidelines* (CNPS 2001). Botanical surveys were conducted by AMEC biologists, as well as associate botanists from the University of Riverside and H.T. Harvey and Associates, between April 20 and August 27, 2009. Surveys were conducted during the spring to coincide with the blooming period of the majority of plant species that were anticipated to be potentially present. Surveys were conducted to assess the botanical resources within the potential Proposed Project impact areas, including an approximately 500-foot buffer around the centerline for the TRTP transmission line. The 2009 botanical surveys updated the botanical surveys conducted along the TRTP segments in 2007 and 2008.

In 2010, botanical surveys were conducted for Segments 7 and 8 of the TRTP. Botanical surveys were conducted by ICF biologists and subconsultants—ECORP Consulting, Inc., BonTerra, Dudek, Merkel & Associates, and WRA Environmental Consultants—between April 12 and August 6, 2010. Botanical surveys were conducted in accordance with the CNPS (2001) guidelines, CDFW *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFW 2009), and USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996). Surveys were conducted to assess the botanical resources within the potential TRTP impact areas, including an approximately 500-foot buffer around the centerline for the TRTP transmission line.

5.1.5 Delineation of Jurisdictional Waters

ICF wetland biologists conducted wetland delineations for the TRTP from September to November 2009; November 2009 to July 2010; and on April 4 and 5, 2011. The delineations were conducted in accordance with the USACE *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). During the delineation work, the TRTP was evaluated to identify jurisdictional wetlands and waters and their connection to off-site hydrologic resources. Any wetlands observed were identified by observing the presence of USACE-defined wetland parameters, including hydrophytic vegetation, wetland hydrology, and hydric soils. Waters were delineated by identifying the ordinary high water mark (OHWM) of the feature and/or the top of bank (TOB) or extent of riparian vegetation. Data was recorded on wetland field data forms, and a submeter-accurate GPS unit was used to record the boundaries and/or centerlines of the wetlands and waters.

On June 3 and June 4, 2014, Insignia biologists Isabelle de Geofroy and Lauren Huff conducted a survey of the Mesa Substation site. In addition, on June 18, 2014, Lauren Huff conducted a

survey of the entire Goodrich Substation site. Surveys were conducted to verify the jurisdictional waters and wetlands identified for the TRTP and to document any additional waters and wetlands. The biologists walked the entire Proposed Project area and spot-checked all wetlands and waters identified for the TRTP. The biologists also confirmed the vegetation communities and descriptions documented in the TRTP reports. The location, OHWM width (if applicable), and TOB width (if applicable) of any new water features observed were recorded using a submeter-accurate GPS unit. In addition, representative photographs were taken of all jurisdictional or potentially jurisdictional wetlands and waters observed on the Proposed Project area.

On December 15 through 18, 2014, Insignia biologists Isabelle de Geofroy and Christina Sousa conducted a wetland delineation of the transmission, subtransmission, distribution, and telecommunications line work sites. The delineations were conducted using the same methodology as the ICF delineations.

5.2 IMPACT DETERMINATION

Potential impacts associated with the Proposed Project can be classified as temporary, permanent, direct, and/or indirect. Impacts to sensitive species may occur either through temporary or permanent habitat loss, interruption of normal species routines, or through direct mortality. Potential impacts to sensitive species associated with the Proposed Project were assessed by analyzing specific species' requirements, including necessary vegetative habitat, elevation range, foraging needs, denning or breeding requirements, migratory trends, current ranges, and known occurrences or records. Additionally, an estimate of the amount of vegetation removal planned for the clearing of the ROWs, work areas, and access roads was assessed. Impacts to aquatic resources were identified by examining the proximity of these resources to Proposed Project work areas and the construction needs within those areas. In addition, potential changes in hydrology and vegetation that might result from the Proposed Project were analyzed.

5.2.0 Definition of Impacts

Temporary and Permanent

Temporary impacts are those that are temporary in nature and would result in no permanent change. Permanent impacts are those impacts that are lasting and final. Temporary impacts generally include impacts associated with construction activities, including the use of vehicles or helicopters, storage of construction materials and equipment, or vegetation removal in areas that would be restored once construction is complete. Permanent impacts generally include impacts associated with construction and installation of a new facility.

Direct and Indirect

Direct impacts include primary effects that are caused by a project and occur at the same time and place as project implementation. Indirect effects are those which are caused by a project but occur later in time, or are further removed in distance but are reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems. Direct impacts may refer to the loss or removal of vegetation communities due to construction of new access roads or work at

staging/laydown areas. Indirect impacts may include interruption of nesting or foraging behavior due to loss of prey items, such as insects or food resources.

6 – RESULTS

6.0 GEOGRAPHY, CLIMATE, AND HYDROLOGY

The Proposed Project is located within the northwestern portion of the Peninsular Ranges Geomorphic Province in the foothills of the San Gabriel Mountains in the Los Angeles Basin, where the Peninsular and Transverse ranges meet. The Proposed Project is within the Los Angeles River Hydrological Unit. Streams are generally dry in the summer months, but it is common for perennial flows to be present, especially in the larger streams fed by the San Gabriel Mountains or urban runoff. Many of the drainages in this region have been lined with concrete to serve as flood control channels, or have otherwise been altered to conform to the urban landscape. Flood-control and debris-control dams have been built on many of the larger channels, especially at the interface between the mountains and the urban area, including the Whittier Narrows Flood Control Basin and the Santa Fe Flood Control Basin. With the exception of several smaller or headwater drainages in undeveloped areas (e.g., the Chino Hills and Puente Hills), few streams remain in a natural state.

Major drainages in the region include Alhambra Wash, Avocado Creek, Chino Creek, Cucamonga Creek, Eaton Wash, La Canada Verde Creek, Little Chino Creek, Mission Creek, Rio Hondo, Rubio Wash, and the San Gabriel River. In the vicinity of the Mesa Substation site and the associated transmission, subtransmission, distribution, and telecommunications line work sites, storm water generally flows from the northeast to the southwest and is collected in storm drains that connect to the Rio Hondo or the San Gabriel River. In the vicinity of the temporary 220 kV line loop-in at Goodrich Substation, storm water generally flows from the east to the west toward the Eaton Wash, which also flows to the Rio Hondo. The Rio Hondo empties into the Los Angeles River. Both the San Gabriel River and the Los Angeles River flow from north to south and eventually empty into the San Pedro Bay in Seal Beach and Long Beach, respectively.

The elevation of the Proposed Project ranges from 130 feet to 750 feet above mean sea level. Between the years of 1981 and 2010, rainfall records from the nearest climatological station (which is located in the City of Montebello) to the Mesa Substation site show an average annual rainfall of approximately 15.3 inches. Between 1981 and 2010, the average annual temperature for this area was approximately 67.4 degrees Fahrenheit.

6.1 VEGETATION COMMUNITIES AND ASSOCIATED WILDLIFE HABITATS

The Proposed Project area consists of urbanized development and natural areas. Urbanized development includes the existing and to-be-acquired SCE fee-owned properties and ROWs. Other uses in the vicinity include public roads and residential, commercial, and industrial properties. In addition, several nurseries are located within or near the Proposed Project area. Natural areas are concentrated in four sections of the Proposed Project area: the Mesa Substation site and adjacent ROWs; the Montebello Hills; the Rio Hondo corridor; and the San Gabriel

River corridor, as shown in Figure 1: Project Overview Map. The following 14 vegetation communities occur in the Proposed Project area:

- California annual grassland
- California walnut woodland
- Coast live oak woodland
- Coastal sage scrub
- Disturbed/developed areas
- Mulefat scrub
- Non-native giant reed
- Non-native woodland
- Riparian woodland
- Ruderal
- Southern sycamore-alder riparian woodland
- Ephemeral drainages
- Intermittent drainage
- Man-induced wetlands

Vegetation is a prime factor in assessing the suitability of a site for use by certain wildlife species and the potential for occurrence of certain plant species. The following subsections provide descriptions of each vegetation community and the associated and observed wildlife species of each community within the Proposed Project area. Vegetation communities are described to be consistent with the *Final Environmental Impact Statement, Southern California Edison's Application for the Tehachapi Renewables Transmission Project*. Nomenclature used for plant names follows *The Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). Nomenclatural changes made after the publication date of this manual follow the Jepson eFlora (2014) website.

The location of each vegetation community is provided in Figure 2: Vegetation Communities Map. Representative photographs of the vegetation communities in the Proposed Project area are provided in Attachment A: Representative Photographs. A complete list of plant species observed in the Proposed Project area during Insignia's 2014 field visits is presented in Attachment B: Plant Species Observed by Insignia in June and December 2014. A complete list of wildlife observed in the Proposed Project area during Insignia's 2014 field visits is presented Attachment C: Wildlife Species Observed by Insignia in June and December 2014.

6.1.0 California Annual Grassland

Prior to the settlement of Europeans in California, the California landscape was dominated by native, perennial bunchgrasses. A variety of Mediterranean grass and forb species were subsequently brought to California for use as crops or ornamentals, or inadvertently in the fur and digestive systems of livestock. Land use changes resulted in the establishment of annual grasses of Eurasian ancestry and the displacement of the native grasses, creating a new kind of grassland community.

California annual grasslands are often associated with deep, fine-textured soils that contain some clay content. In the Proposed Project area, this vegetation community occurs in the Mesa

Figure 2:
Vegetation Communities
Map 1 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

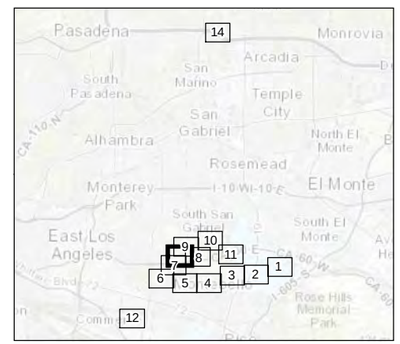

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Figure 2:
Vegetation Communities
Map 2 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
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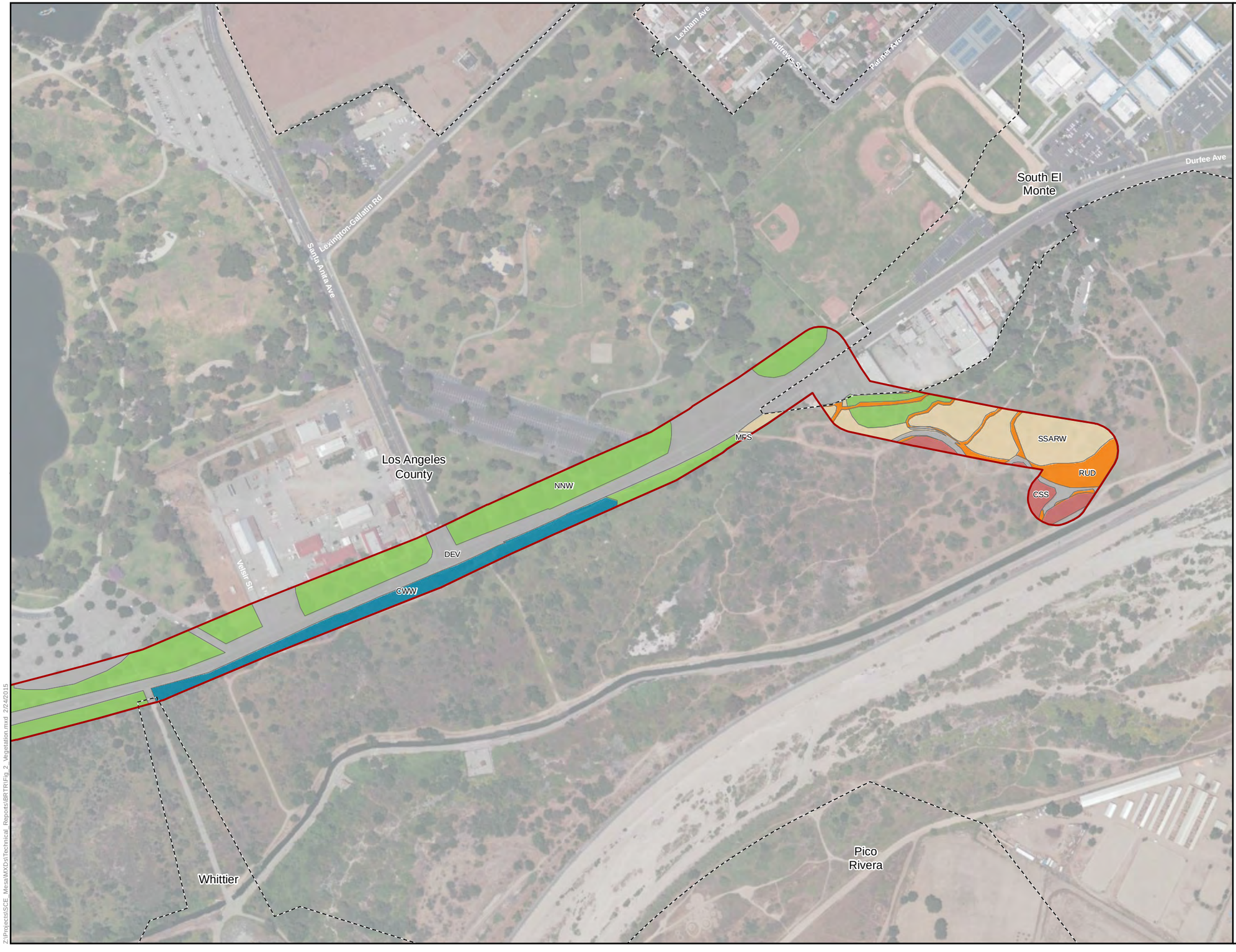
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)



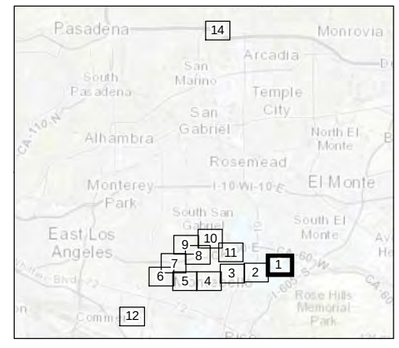


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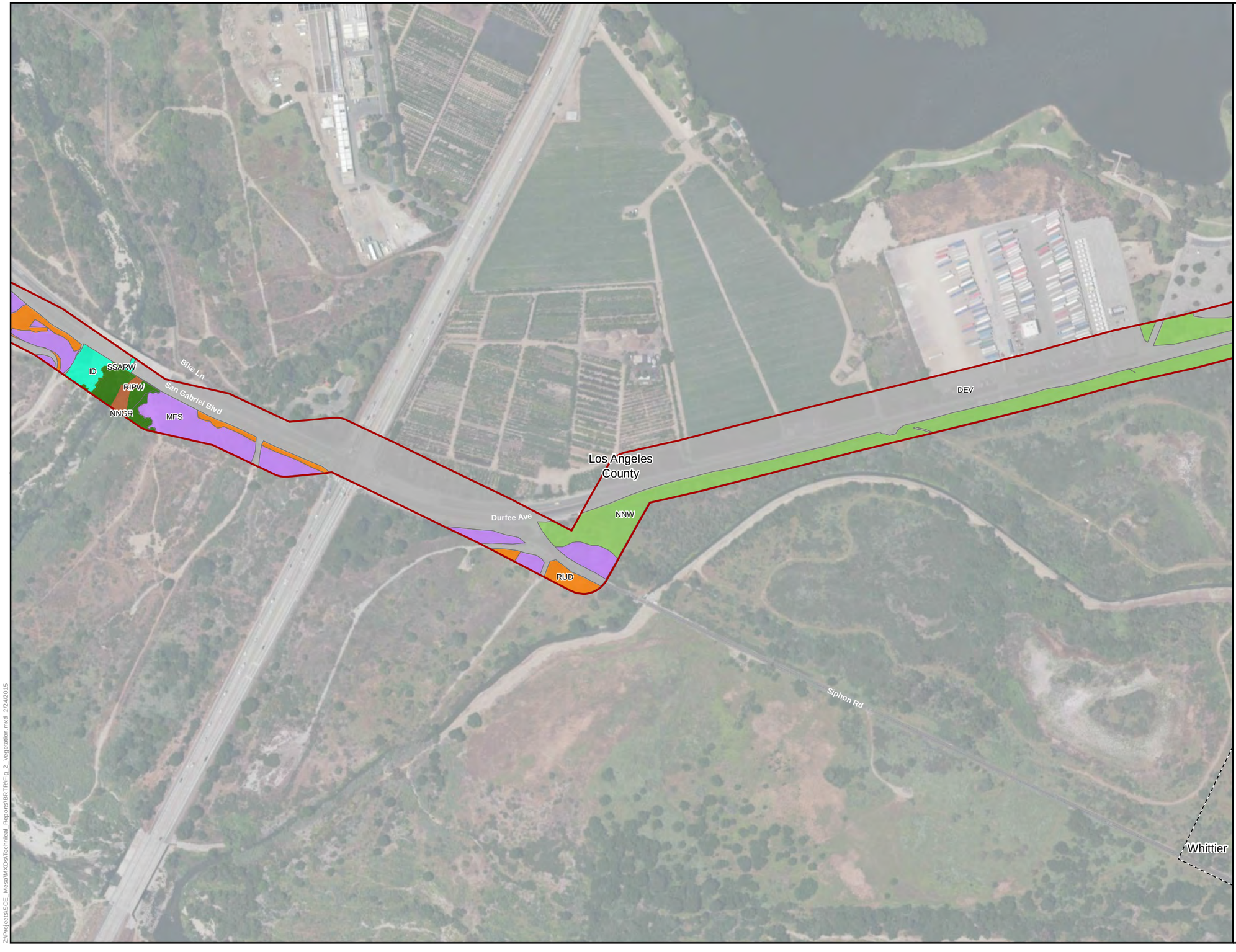
Figure 2:
Vegetation Communities
Map 3 of 15

Mesa 500 kV Substation Project



Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

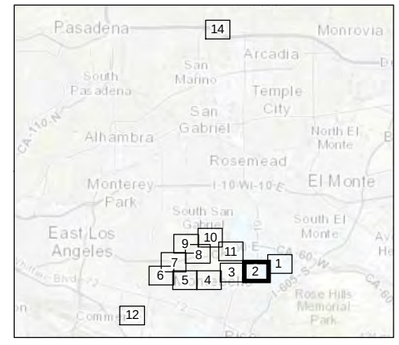


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Figure 2:
Vegetation Communities
Map 4 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

California Annual Grassland (CAG)
California Walnut Woodland (CWW)
Coast Live Oak Woodland (CLOW)
Coastal Sage Scrub (CSS)
Disturbed/Developed (DEV)
Mulefat Scrub (MFS)
Non-Native Giant Reed (NNGR)
Non-Native Woodland (NNW)
Riparian Woodland (RIPW)
Ruderal (RUD)
Southern Sycamore-Alder Riparian Woodland (SSARW)
Ephemeral Drainage (ED)
Intermittent Drainage (ID)
Man-Induced Wetland (MIW)

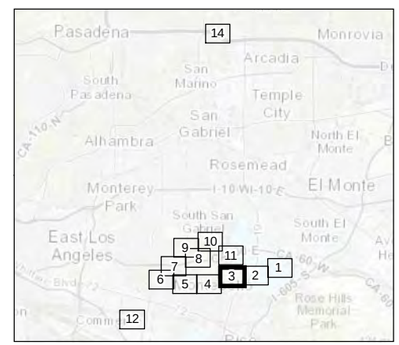

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Figure 2:
Vegetation Communities
Map 5 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
- Non-Native Woodland (NNW)
- Riparian Woodland (RIPW)
- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

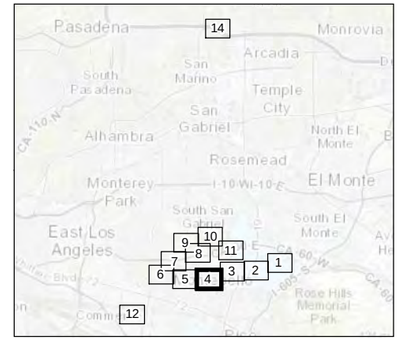

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Figure 2:
Vegetation Communities
Map 6 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Non-Native Giant Reed (NNGR)
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- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

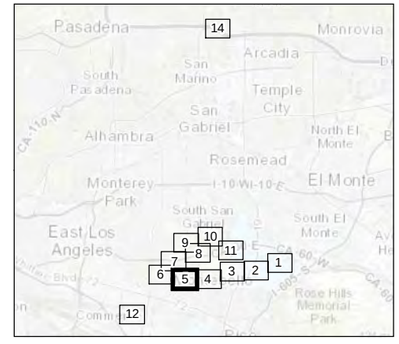

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Figure 2:
Vegetation Communities
Map 7 of 15

Mesa 500 kV Substation Project

RUD
CAG
NNW
DEV
Montebello
Via Daviso
Via Paseo
Via Altamira
N Garfield Ave
N Hay St
Morris Pl
N Wilcox Ave
Donna Way
N Via Val Verde
Via Camille
Via Nina
Via Acosta
Via Lucia
N Concourse Ave
Belmont St
Libre Plz
W Beverly Blvd
W Beverly Blvd
W Victoria Ave
N 21st St
N 20th St
N 19th St
N 18th St
N Vail Ave
W Lincoln Ave
Loma Rd
Merle Dr
San Antonio Dr
Gardner Dr
Germain Dr
Perry St
Appian Way
Milano
Via Roma
Bolker Way
Brighton Way
Westmoreland Dr
Baldwin Pl
Darcy Dr
Cabot Pl
Malone Dr
Coffman Dr

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Ruderal (RUD)
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- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

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Figure 2:
Vegetation Communities
Map 8 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
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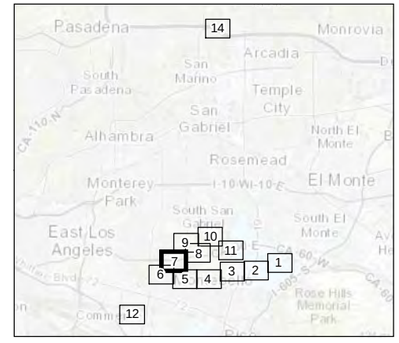

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Figure 2:
Vegetation Communities
Map 9 of 15

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Non-Native Giant Reed (NNGR)
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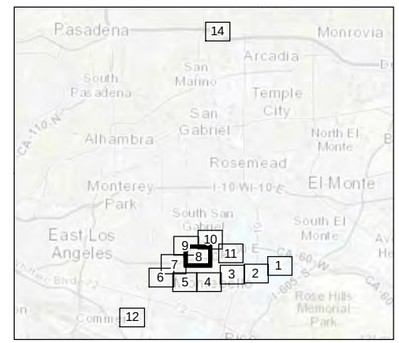

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Figure 2:
Vegetation Communities
Map 10 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Non-Native Giant Reed (NNGR)
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- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

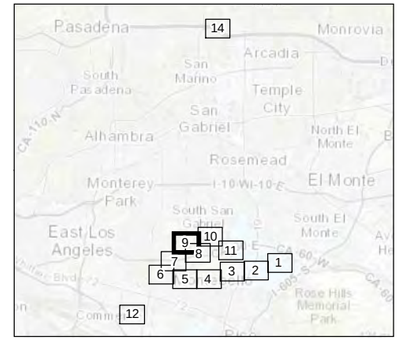

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Figure 2:
Vegetation Communities
Map 11 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

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Figure 2:
Vegetation Communities
Map 12 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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- Disturbed/Developed (DEV)
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- Non-Native Giant Reed (NNGR)
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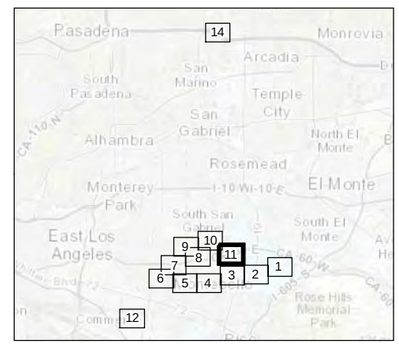

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Figure 2:
Vegetation Communities
Map 13 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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Figure 2:
Vegetation Communities
Map 14 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
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- Disturbed/Developed (DEV)
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- Non-Native Giant Reed (NNGR)
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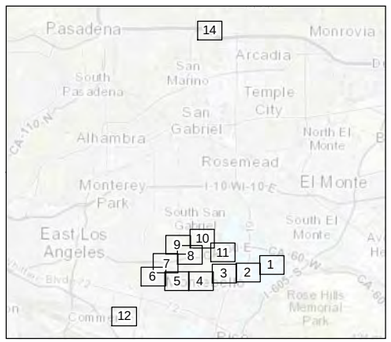

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Figure 2:
Vegetation Communities
Map 15 of 15

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area

City Boundary

Vegetation Communities

- California Annual Grassland (CAG)
- California Walnut Woodland (CWW)
- Coast Live Oak Woodland (CLOW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
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- Ruderal (RUD)
- Southern Sycamore-Alder Riparian Woodland (SSARW)
- Ephemeral Drainage (ED)
- Intermittent Drainage (ID)
- Man-Induced Wetland (MIW)

CLOW

DEV

Goodrich Substation

Pasadena

Las Lunas St

Deodar Cir

del Vina St

E Villa St

Maple St

I- 210

E Corson St

la Tierra St

N Sierra Madre Blvd

Mataro St

Wenger Ally

Vine Aly

Culver Aly

E Foothill Blvd

Bersa St

Sierra Grande St

E Walnut St

Nina St

Walnut St

Frontage Rd

Alameda St

Estado St

Avocado Ave

Avocado Ln

Vineyard Pl

Santa Paula Ave

Mercury Ln

Bella Vista Ave

N Vinedo Ave

N Sierra Madre Blvd

Mercedes Ave

N Daisy Ave

Castano Ave

N Sunnyslope Ave

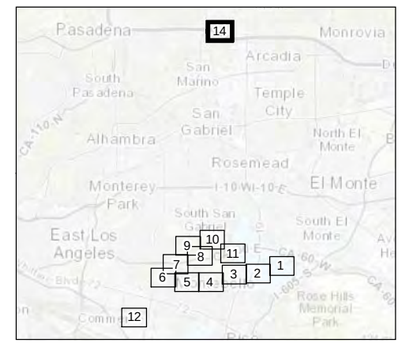
Eaton Dr

N San Gabriel Blvd

Tilley Ave

Sierra Madre Villa Ave

N Kinneloa Ave



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Substation site just north of the substation and in the southwestern portion of the site. Dominant grass and forb species are non-native species, such as slender wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), Italian rye grass (*Festuca perennis*), wild oats (*Avena* spp.), black mustard (*Brassica nigra*), short-podded mustard (*Hirschfeldia incana*), wild radish (*Raphanus sativus*), white-stem filaree (*Erodium moschatum*), and woolly trefoil (*Acmispon brachycarpus*). Native species also occur in this plant community; however, their total percent cover is much lower than that of the non-native species. Native species found in California annual grasslands within the Proposed Project area include tufted poppy (*Eschscholzia caespitosa*) and turkey mullein (*Croton setigerus*). Typical wildlife species that may use this habitat include mourning dove (*Zenaida macroura*), western meadowlark (*Sturnella neglecta*), and red-tailed hawk (*Buteo jamaicensis*). California annual grassland is consistent with the non-native grassland vegetation community described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.1 California Walnut Woodland

Stands of California walnut woodland are dominated by California walnut with scattered coast live oak co-occurring in the canopy. Within the Proposed Project area, the shrub layer often contains blue elderberry (*Sambucus nigra* subsp. *caerulea*), laurel sumac (*Malosma laurina*), and poison oak (*Toxicodendron diversilobum*). The herbaceous layer is dominated by non-native grasses. Species composition also includes the occasional coastal sage scrub species (e.g., California sagebrush [*Artemisia californica*]), and disturbance-adapted species, such as non-native brome grasses and poison hemlock (*Conium maculatum*). Stands of California walnut woodland occur primarily in the San Gabriel River corridor and in the Montebello Hills. Wildlife species typical of this habitat include house finch (*Carpodacus mexicanus frontalis*), northern mockingbird (*Mimus polyglottos*), and northern flicker (*Colaptes auratus*). California walnut woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.2 Coast Live Oak Woodland

Coast live oak woodland typically consists of open to relatively closed canopy stands dominated by coast live oak. This vegetation community occurs within the outer South Coast Ranges, and coastal slopes of the Transverse and Peninsular Ranges, usually below 4,000 feet. Within the Proposed Project area, disturbed coast live oak woodland occurs along Eaton Wash within the Goodrich Substation site. This vegetation community consists of an open row of coast live oaks intermixed with non-native species, such as Brazilian pepper tree (*Schinus terebenthifolius*) and Mexican fan palm (*Washingtonia robusta*). The herbaceous understory is dominated by non-native grasses. As a wildlife habitat, these woodlands can provide nesting sites for a variety of raptors, especially if they are adjacent to open spaces. Coast live oak woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.3 Coastal Sage Scrub

Coastal sage scrub consists of low, mostly soft-woody shrubs with a sparse herbaceous layer. Stands may be dominated by California sagebrush or by California buckwheat (*Eriogonum fasciculatum*). Coastal sage scrub is present in the Montebello Hills, the San Gabriel River

corridor, and on a hillslope on the south side of the Mesa Substation. Wildlife species typically found in this vegetation community include California towhee (*Pipilo crissalis*), song sparrow (*Melospiza melodia*), western bluebird (*Siglia mexicana*), western scrub-jay (*Aphelocoma californica*), Audubon's cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*). Coastal sage scrub was originally described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and is consistent with Diegan coastal sage scrub (Holland 1986).

6.1.4 Disturbed/Developed Areas

Disturbed/developed areas are generally subject to intensive human use with much of the land paved or covered by structures. Disturbed areas are typically characterized by heavily compacted or frequently disturbed soils. In all cases, disturbed/developed areas are devoid of naturally growing vegetation or possess only sparse cover. Disturbed habitat includes dirt roads, areas where permanent structures have been constructed, agricultural fields, and landscaped areas that are mowed or maintained regularly, thus precluding the establishment of natural vegetation. Developed land within the Proposed Project area includes areas such as Mesa Substation and Goodrich Substation. Wildlife species that are typically associated with disturbed/developed habitat include house finch, common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), northern mockingbird, and rock dove (*Columbia livia*). Disturbed/developed areas is an anthropogenic vegetation community characterized by Insignia.

6.1.5 Mulefat Scrub

Mulefat scrub is a riparian scrub community dominated by mulefat (*Baccharis salicifolia*). This early seral community is maintained by frequent flooding. Without frequent flooding, most stands would succeed to willow- (*Salix* sp.) or sycamore- (*Platanus racemosa*) dominated riparian forests or woodlands. The community occurs in stream channels with fairly coarse substrate and moderate depth to the water table. Mulefat scrub was documented in the southern portion of the Mesa Substation site along two ephemeral channels, as well as along the Rio Hondo and San Gabriel River corridors. This habitat can support reptile and amphibian species, as well as a number of passerines, such as wintering white-crowned sparrow (*Zonotrichia leucophrys*) and breeding western kingbird (*Tyrannus verticalis*). Mulefat scrub is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.6 Non-native Giant Reed

Non-native giant reed stands are dominated by dense, impenetrable thickets of giant reed (*Arundo donax*), with few or no other species present. Giant reed is a non-native, bamboo-like, perennial grass that grows up to 26 feet tall. It most often occurs in riparian corridors and has become a serious problem throughout California. The U.S. Forest Service considers giant reed to be an invasive weed of high concern for its severe impacts on ecosystems, plant and animal communities, and vegetation structure. One stand of giant reed was mapped on the east bank of the Rio Hondo, just south of North San Gabriel Boulevard. Few wildlife species are found here due to the compact nature of this plant and a lack of lateral branches. Birds may use it for perching along riparian corridors, but it does not provide good forage or cover. Non-native giant reed was originally described as exotic giant reed in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.7 Non-Native Woodland

Non-native woodland describes tree stands dominated by eucalyptus (*Eucalyptus* spp.), Brazilian pepper tree, or pine (*Pinus* spp). These trees were often historically planted as windbreaks and for aesthetic and horticultural purposes around houses, parks, and other developed areas. Understory development in these communities tends to be limited because of a combination of thick bark, leaf-litter, and/or seed pods deposited below the trees, as well as potentially allelopathic compounds in these materials.[6] Non-native woodlands typically support a limited amount of native vegetation. Non-native woodland was documented in the area surrounding Mesa Substation the associated ROWs; south of the Montebello Hills area; and within residential parks, nurseries, and other landscaped areas. As a wildlife habitat, these woodlands can provide nesting sites for a variety of raptors, especially if they are adjacent to open spaces. Non-native woodland is described in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.8 Riparian Woodland

Riparian woodland is a vegetation community that occurs along the margins of streams and rivers that are subject to seasonal flooding. Natural riparian woodlands are rich habitats, supporting numerous plant species that can include trees, shrubs, vines, and annual and perennial herbs. This variety of plants provides a complex vegetative structure, which in turn supports a diversity of wildlife species. Most natural riparian woodlands in Southern California have been lost or degraded by land use conversions to agriculture, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; and water impoundments. Disturbed riparian woodland was documented along ephemeral drainages in the vicinity of Mesa Substation and East Markland Drive. Vegetation in this plant community consists of a preponderance of non-native species trees, including Brazilian pepper tree, date palm (*Phoenix dactylifera*), and Mexican fan palm with a few native riparian species, including Goodding's black willow (*Salix gooddingii*), and mulefat. Wildlife species typical of this habitat type include European starling, American crow (*Corvus brachyrhynchos*), and house finch. Riparian woodland is described as southern coast live oak riparian forest in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986); however, due to the high level of disturbance, the riparian woodland found within the Proposed Project area does not meet the typical vegetation description.

6.1.9 Ruderal

Ruderal (weedy) areas consist of an assemblage of plants that thrive in waste areas, roadsides, construction sites, and other sites that are repeatedly disturbed by human activity. The common ruderal species that were detected include crimson fountain grass (*Pennisetum setaceum*), black mustard, short-podded mustard, wild radish, tocalote (*Centaurea melitensis*), prickly lettuce (*Lactuca serriola*), telegraph weed (*Heterotheca grandiflora*), Russian thistle (*Salsola tragus*), woolly mullein (*Verbascum thapsus*), and sweet fennel (*Foeniculum vulgare*). Within the Proposed Project area, this vegetation community occurs throughout Mesa Substation and the associated ROWs, in the Montebello Hills area, and in the Rio Hondo and San Gabriel River

[6] Allelopathic describes the process by which one plant produces compounds that inhibit or otherwise influence the growth or development of neighboring plants.

corridors. This habitat type typically supports fewer wildlife species due to a lack of cover; species found may include western fence lizard (*Sceloporus occidentalis*) and rodents. Ruderal is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*.

6.1.10 Southern Sycamore-Alder Riparian Woodland

In stands of southern sycamore-alder riparian woodland, widely spaced California sycamore is the dominant tree in the canopy, white alder (*Alnus rhombifolia*) is frequently present, and a shrub layer exists. Several stands of southern sycamore-alder riparian woodland occur in the Rio Hondo and San Gabriel River corridors. Occurrences of this vegetation community within the Proposed Project area are fragmented or being restored and contain non-native trees, including Monterey pine (*Pinus radiata*) and cypress (*Cupressus* sp.). The shrub layer is comprised of willow, mulefat, and mugwort (*Artemisia douglasiana*). Woody vines present were poison oak and wild grape (*Vitis girdiana*). Wildlife species typical in this habitat include white-crowned sparrow, house finch, and Audubon's cottontail. Southern sycamore-alder riparian woodland is consistent with the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project*, and conforms to Holland (1986).

6.1.11 Ephemeral Drainages

Ephemeral drainages describe large, mostly unvegetated wash systems. This community consists of channels that temporarily convey concentrated flows following storm events. These areas are dry for the majority of the year and, in the Proposed Project area, are generally vegetated with non-native annual grasses or weedy species. Species documented in the drainages include castor bean (*Ricinus communis*), short-podded mustard, slender wild oat, wild radish, and thornapple (*Datura wrightii*). Ephemeral drainages occur throughout the Mesa Substation site. These sites often support terrestrial wildlife species, such as mice or western fence lizards that can find cover under man-made features in disturbed areas. Ephemeral drainages are characterized by Insignia.

6.1.12 Intermittent Drainage

Rio Hondo is an intermittent drainage that traverses the Proposed Project area under North San Gabriel Road. Rio Hondo is generally dry in the summer months, flowing after the start of winter rains. The bed of the drainage is sandy and sparsely vegetated with polygonum (*Polygonum* sp.). The banks are vegetated with giant reed, Goodding's black willow, mulefat, castor bean, dwarf nettle (*Urtica urens*), and California buckwheat, among others. Intermittent drainage is characterized by Insignia.

6.1.13 Man-Induced Wetlands

Five man-induced wetlands occur in the northeast portion of the Mesa Substation site. The wetlands are vegetated by a wide variety of grasses and perennial herbs adapted for growth in saturated soils, including mule fat, broad-leaved cattail (*Typha latifolia*), tall flatsedge (*Cyperus eragrostis*), broadleaf pepperweed (*Lepidium latifolium*), hairy willowherb (*Epilobium ciliatum*), and rabbit's-foot grass (*Polypogon monspeliensis*). All man-induced water features within the Proposed Project area have developed as a result of a leaking underground irrigation pipe associated with the adjacent nursery. At the time of the surveys, these features contained a small amount of standing water. Man-induced wetlands are characterized by Insignia.

6.2 SPECIAL-STATUS PLANT SPECIES

After searching the CDFW's CNDDB (2014) for special-status plant records within 5 miles of the Proposed Project area and the CNPS Inventory of Rare and Endangered Plants of California for a list of special-status plant species known to occur in the vicinity of the Proposed Project, Insignia compiled a list of 29 special-status plant species that have potential to occur in the region of the Proposed Project, which is presented in Table 7: Special-Status Plant Species. CNDDB occurrences within 5 miles of the Proposed Project area are depicted in Figure 3: Mesa Substation CNDDB Plant Occurrences Map and Figure 4: Goodrich Substation CNDDB Plant Occurrences Map.

Of the 29 special-status plant species identified, nine occur in specialized habitats (e.g., marshes, swamps, meadows, and vernal pools) that do not occur within the Proposed Project area. Thus these plants are not expected to occur in the Proposed Project area. CNDDB occurrences for the remaining 20 potentially occurring special-status plant species were identified within 5 miles of the Proposed Project area, as shown in Figure 3: Mesa Substation CNDDB Plant Occurrences Map and Figure 4: Goodrich Substation CNDDB Plant Occurrences Map, as well as in Table 7: Special-Status Plant Species. Of the 20 special-status plant species, the following determinations were made:

- two species—California black walnut and Nevin's barberry—were found to be present in the Proposed Project area,
- no species were determined to have a high potential to occur within the Proposed Project area,
- three species—southern tarplant (*Centromadia parryi* ssp. *australis*), Plummer's mariposa-lily (*Calochortus plummerae*) and intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)—were determined to have a moderate potential to occur within the Proposed Project area,
- 15 species were determined to have a low potential to occur within the Proposed Project area, and

A detailed discussion regarding local populations, habitat requirements, and life history of the California black walnut, Nevin's barberry, southern tarplant, Plummer's mariposa-lily, and intermediate mariposa-lily is provided in the following subsection.

While focused special-status plant surveys were conducted for the TRTP between 2007 and 2010, these surveys were limited to the sections of the Proposed Project site that are included in the TRTP; therefore, no special-status plant surveys have been conducted in areas of the Proposed Project that do not overlap with the TRTP. In addition, current environmental conditions on the Proposed Project site could differ from conditions present at the time special-status plant surveys were conducted in 2010. Furthermore, CDFG (2009), USFWS (1996), and CNPS (2001) guidelines state that focused surveys for special-status plants must be conducted when any natural vegetation occurs on a project site and the activity has the potential for direct or indirect effects on vegetation. As such, the presence of rare plant species with the potential to

occur cannot be dismissed from the Proposed Project site until special-status plant surveys are conducted prior to the start of construction.

6.2.0 Species Present in the Proposed Project Area

California Black Walnut

California black walnut is a CNPS CRPR 4.2 perennial deciduous tree that is endemic to Southern California. It typically occurs in alluvial chaparral, cismontane woodland, and coastal scrub habitats at elevations between 150 and 3,000 feet. This species has also been found across a wide range of habitats, including riparian woodland, cliffs, sage scrub, and grassland habitat. The blooming period for California black walnuts is from March to August. Five California black walnut individuals were observed in ruderal habitat on the Mesa Substation site during the TRTP 2009 and 2010 rare plant surveys. Seven California black walnut individuals were observed along Lincoln Boulevard in the Montebello Hills area during Insignia's December 2014 survey. The locations of the California black walnuts that were observed on-site are depicted in Figure 5: Biological Resources Observations Map.

The California black walnut is not protected by the FESA or CESA, nor does it have any special federal or state protected status. This plant is a CNPS CRPR 4.2 species; it is of limited distribution or infrequent throughout a broader area in California. Although the CNPS recommends that this species be evaluated for CEQA consideration, this is not required under CEQA. California black walnut occurs or has the potential to occur in the cities of Monterey Park and Montebello, and in unincorporated areas of Los Angeles County; however, mitigation or compensation for the removal of California black walnut trees is not required by these jurisdictions.

Nevin's Barberry

Nevin's barberry is a federal and state-listed endangered species and a CNPS CRPR 1.2 species. This evergreen shrub typically occurs in chaparral, cismontane woodland, coastal sage scrub, and riparian scrub, on steep, north-facing slopes or in low-grade sandy washes on gravelly soils. It blooms between March and June. This species is threatened by habitat loss associated with development and road maintenance. Within the Proposed Project area, one individual Nevin's barberry was observed during Insignia's December field surveys, in the Whittier Narrows Nature Center along the San Gabriel River corridor. The location of the Nevin's barberry is depicted in Figure 5: Biological Resources Observations Map. A photograph of this species is included in Attachment A: Representative Photographs.

Table 7: Special-Status Plant Species

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Asteraceae (Compositae) – Sunflower Family					
Southern tarplant (*Centromadia parryi* ssp. *australis*)	1B.1	Southern tarplant is an annual herb that occurs in the margins of marshes and swamps, vernally mesic valley and foothill grasslands, and vernal pool habitats. It is typically found at elevations from sea level to approximately 650 feet.	June through October	Two CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site[8], both of which are presumed extant. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this occurrence is possibly extirpated.	Suitable habitat for this species occurs along the banks of Rio Hondo. As a CNDDB occurrence for this species is located upstream of the Proposed Project area within the Rio Hondo corridor, this species has a moderate potential to occur. **Moderate Potential**
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	1A	Los Angeles sunflower is a perennial rhizomatous herb that occurs in coastal salt and freshwater marsh and swamp habitats. It is typically found at elevations from approximately 30 to 5,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1903 and is possibly extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	1B.1	Coulter's goldfields is an annual herb that occurs in coastal salt marshes and swamps, playas and vernal pools. It is typically found from sea level to approximately 4,000 feet in elevation.	April through May	One CNDDB occurrence is documented within 5 miles of the Proposed Project area; however, this occurrence was recorded in 1939 and is possibly extirpated. One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1882 and is possibly extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
White rabbit-tobacco (*Pseudognaphalium leucocephalum*)	2B.2	White rabbit-tobacco is a perennial herb that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. It typically occurs at elevations from sea level to approximately 7,000 feet.	July through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. While both records are presumed extant, these occurrences were recorded before 1930.	Suitable habitat for this species occurs in the Proposed Project area in the Montebello Hills area, south of Mesa Substation, and in the Rio Hondo and San Gabriel River corridors. However, no documented occurrences are within 5 miles of this portion of the Proposed Project area. **Low Potential**

[7] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally listed as Endangered
-FT: Federally listed as Threatened

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-CR: State-listed as Rare

Rare Plant Ranks:

-1A: Presumed extirpated because they have not been seen or collected in the wild in California for many years
-1B.1: Rare, threatened or endangered in California or elsewhere; seriously threatened in California
-1B.2: Rare, threatened or endangered in California or elsewhere; fairly threatened in California
-1B.3: Rare, threatened or endangered in California or elsewhere; not very threatened in California
-2.1: Rare, threatened or endangered in California only; seriously threatened in California
-2.2: Rare, threatened or endangered in California only; fairly threatened in California
-3: More information is needed regarding this species; taxonomically uncertain
-4.1: Limited in distribution or infrequent throughout California; seriously threatened in California
-4.2: Limited in distribution or infrequent in California; fairly threatened in California
-4.3: Limited in distribution or infrequent in California; not very threatened in California

[8] The Mesa Substation site includes Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications work.

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
San Bernardino aster (*Symphyotrichum defoliatum*)	1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, seeps, marshes, swamps, and valley and foothill grassland, below 6,700 feet in elevation.	July through November	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1930 and is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. The only CNDDB occurrence of this species was recorded in 1930 and is presumed extirpated. **Low Potential**
Greata's aster (*Symphyotrichum greatae*)	1B.3	Greata's aster is a perennial rhizomatous herb that occurs in mesic areas in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland habitats. It is typically found at elevations from approximately 1,000 to 6,500 feet.	August through October	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded before 1920 and one is possibly extirpated.	Suitable habitat for this species occurs in the Rio Hondo and San Gabriel River corridors. However, the Proposed Project is outside of this species' elevation range. **Low Potential**
Berberidaceae – Barberry Family					
Nevin's barberry (*Berberis nevinii*)	FE CE 1B.1	Nevin's barberry is a perennial evergreen shrub that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian habitats. It is typically found at elevations from approximately 900 to 2,700 feet.	March through June	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Three CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All three records are presumed extant.	This species was observed in the San Gabriel River corridor during field surveys conducted by Insignia biologists in December 2014. **Present**
Boraginaceae – Borage Family					
Brand's star phacelia (*Phacelia stellaris*)	1B.1	Brand's star phacelia is an annual herb that occurs in coastal dunes and coastal scrub habitats. It is typically found at elevations from sea level to approximately 1,300 feet.	March through May	Two CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site; however, these occurrences were documented before 1936 and are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs within the Proposed Project area south of Mesa Substation and in the Montebello Hills area. The closest record for this species was last seen near the Proposed Project area in 1936. **Low Potential**
Brassicaceae (Cruciferae) – Mustard Family					
Poor-man's peppergrass (*Lepidium virginicum* ssp. *menziesii*), (previously Robinson's pepper-grass [*Lepidium virginicum* ssp. *robinsonii*])	4.3	Robinson's pepper-grass is an annual herb that occurs in chaparral and coastal scrub habitat. It is typically found at elevations from sea level to approximately 2,900 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, there are no recorded occurrences in this area. **Low Potential**
Convolvulaceae – Morning-Glory Family					
Lucky morning-glory (*Calystegia felix*)	3.1	This species is historically associated with wetlands and marshy habitats, but also can occur in drier locales. Potential habitats include sometimes alkaline meadows and seeps, and alluvial riparian scrub.	March through September	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo and San Gabriel River corridors. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Santa Barbara morning glory (*Calystegia sepium* ssp. *binghamiae*)	1B.1	Santa Barbara morning glory is perennial rhizomatous herb that occurs in wetland and marshy areas, possibly in silty loam and alkaline substrates. It is typically found at elevations from sea level to approximately 65 feet.	April through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs within the Proposed Project area. **No Potential**
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	2B.2	Peruvian dodder is an annual parasitic vine that occurs in marsh and swamp habitats. It is typically found at elevations below approximately 1,600 feet.	July through October	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. The CNDDB occurrence listed above is also located is within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Cyperaceae – Sedge Family					
California saw-grass (*Cladium californicum*)	2B.2	California saw-grass is a perennial rhizomatous herb that occurs in meadows and seeps, as well as in alkaline or freshwater marshes and swamps. It is typically found at elevations from approximately 200 to 2,800 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site; however, this occurrence is extirpated.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Fabaceae (Leguminosae) – Legume Family					
Braunton's milk-vetch (*Astragalus brauntonii*)	FE 1B.1	Braunton's milk-vetch is a perennial herb that occurs in sandstone or carbonite layers in chaparral, coastal scrub, and valley and foothill grassland habitats. It usually occurs in areas that have been recently burned or disturbed. It is typically found at elevations from near sea level to approximately 2,100 feet.	March through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation and in the Montebello Hills area. However, no occurrences have been documented within 5 miles of the site. Two extant occurrences are near the Goodrich Substation site however, there is no suitable habitat in this location. **Low Potential**
Geraniaceae – Geranium Family					
Round-leaved filaree (*California macrophylla*)	1B.1	Round-leaved filaree is an annual herb that occurs in clay substrates in cismontane woodland and valley and foothill grassland habitat. It is typically found at elevations from approximately 50 to 3,900 feet.	March-May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site; however, this record is possibly extirpated.	Marginally suitable habitat for this species occurs within the Proposed Project area south of the Mesa Substation site. **Low Potential**
Grossulariaceae – Gooseberry Family					
Parish's gooseberry (*Ribes divaricatum* var. *parishii*)	1A	Parish's gooseberry is a perennial deciduous shrub that occurs in riparian woodland habitat. It is typically found at elevations from approximately 200 to 1,000 feet.	February through April	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, both of which are presumed extant. There is one occurrence within 5 miles of the Proposed Project area and the Goodrich Substation; however this occurrence was recorded in 1882 and is possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area along the Rio Hondo and San Gabriel River corridors. However, this species is thought to be extirpated from California and was last seen near the Proposed Project area in 1980. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Juglandaceae – Walnut Family					
California black walnut (*Juglans californica*)	4.2	California black walnut is a perennial deciduous tree that occurs in alluvial chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from approximately 150 to 3,000 feet.	March through May	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	This species was observed on the Mesa Substation site during botanical surveys conducted for the TRTP in 2009 and 2010. In addition, Insignia biologists observed this species during December 2014 field surveys along Lincoln Boulevard in the Montebello Hills area, and along Durfee Avenue in the San Gabriel River corridor. **Present**
Lamiaceae (Labiatae) – Mint Family					
Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	1B.2	Southern mountains skullcap is a perennial rhizomatous herb that occurs in mesic areas in chaparral, cismontane woodland, and lower montane coniferous forests. It is typically found at elevations from approximately 2,000 to 6,600 feet.	June through July	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is possibly extirpated. This occurrence is also located within 1 mile of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. The Proposed Project area is located outside of this species' elevation range. **Low Potential**
Liliaceae – Lily Family					
Plummer's mariposa-lily (*Calochortus plummerae*)	4.2	Plummer's mariposa-lily is a perennial bulbiferous herb that occurs in granitic or rocky substrate in chaparral, cismontane woodland, coastal scrub, lower montane forest, and valley and foothill grassland habitats. It is typically found at elevations from approximately 330 to 5,600 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four records are presumed extant. Eight CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Seven of these occurrences are presumed extant, and one is possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Extant occurrences of this species are located in close proximity to the Proposed Project area. **Moderate Potential**
Intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*)	1B.2	Intermediate mariposa-lily is a perennial bulbiferous herb that occurs in rocky and calcareous substrate in chaparral, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from approximately 350 to 2,800 feet.	May through July	Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. All four occurrences are presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. In addition, extant occurrences are within close proximity to the Mesa Substation site. **Moderate Potential**
Poaceae (Gramineae) – Grass Family					
California muhly (*Muhlenbergia californica*)	4.3	California muhly is a perennial rhizomatous herb that occurs in mesic seeps and streambeds in chaparral, coastal scrub, lower montane coniferous forest, and meadow habitat. It is typically found at elevations from approximately 250 to 6,500 feet.	June through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this record is presumed extant, this occurrence was recorded in 1899.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the Rio Hondo and San Gabriel River corridors. However, no occurrences have been documented within 5 miles of these locations. The occurrence near the Goodrich Substation site has not been documented since 1899, and no suitable habitat exists in this location. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
California orcutt grass (*Orcuttia californica*)	FE CE 1B.1	California orcutt grass is an annual herb that occurs in vernal pool habitats. It is typically found at elevations from approximately 50 to 2,150 feet.	April through August	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence is extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Polemoniaceae – Phlox Family					
Prostrate vernal pool navarretia (*Navarretia prostrata*)	1B.1	Prostrate vernal pool navarretia is an annual herb that occurs in mesic coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools. It is typically found at elevations from sea level to approximately 2,300 feet.	April through July	One CNDDB occurrence for this species is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1895 and is possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. Although there is one recorded occurrence for this species in close proximity to the Proposed Project area, it was recorded in 1895. **No Potential**
Polygonaceae – Buckwheat Family					
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	1B.1	Parry's spineflower is an annual herb that occurs in sandy or rocky substrates in openings of chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from approximately 900 to 4,000 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. While this occurrence is presumed extant, it was recorded in 1902.	Suitable habitat for this species occurs in the Proposed Project area south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. However, the only occurrence near the Proposed Project area was observed in 1902.In addition, the Proposed Project area is located outside of this species' elevation range. **Low Potential**
Slender-horned spineflower (*Dodecahema leptoceras*)	FE 1B.1	Slender-horned spineflower is an annual herb that occurs in sandy substrates in chaparral, cismontane woodland, and alluvial fan coastal scrub habitats. It is typically found at elevations from approximately 650 to 2,500 feet.	May through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, both occurrences were recorded in 1920 and are extirpated.	Suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo and San Gabriel River corridors. No documented occurrences are within 5 miles of this portion of the Proposed Project area. **Low Potential**
Rosaceae – Rose Family					
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	1B.1	Mesa horkelia is a perennial herb that occurs in sandy or gravelly substrate in maritime chaparral, cismontane woodland, and coastal scrub habitats. It is typically found at elevations from approximately 200 to 2,300 feet.	March through July	One CNDDB occurrence is documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1911 and is extirpated. In addition to the occurrence listed previously, seven CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site; however, these occurrences were recorded before 1940 and are either extirpated or possibly extirpated.	Suitable habitat for this species occurs in the Proposed Project area in south of Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. Although there are recorded occurrences in close proximity to the Proposed Project area, all are from 1940 or earlier and are presumed extirpated. **Low Potential**

Species Name	Federal, State, and CNPS Status[7]	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Known Locations	Potential to Occur
Rubiaceae – Bedstraw Family					
San Gabriel bedstraw (*Galium grande*)	1B.2	San Gabriel bedstraw is a perennial deciduous shrub that occurs in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest habitats. It is typically found at elevations from approximately 1,400 to 4,000 feet.	May through July	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four records are presumed extant.	No suitable habitat for this species occurs in the Proposed Project area. The Proposed Project area is located outside of this species' elevation range. **No Potential**
Thelypteridaceae – Thelypteris Family					
Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*)	2B.2	Sonoran maiden fern is a perennial rhizomatous herb that occurs in meadow and seep habitat. It is typically found at elevations from approximately 150 to 2,000 feet.	January through September	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. Two CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. Both records are presumed extant.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**
Themidaceae – Brodiaea Family					
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT CE 1B.1	Thread-leaved brodiaea is a perennial bulbiferous herb that occurs in herbaceous plant communities, such as valley needlegrass grassland, valley sacaton grassland, non-native grassland, alkali playa, and vernal pool habitats. These herbaceous communities occur in open areas on clay soils at elevations from 100 to 2,500 feet.	March through June	No CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for this species occurs in the Proposed Project area. **Low Potential**

Sources: CNDDB 2014, USFWS 2014, CNPS 2014

Figure 3:
Mesa Substation
CNDDB Plant Occurrences Map
Mesa 500 kV Substation Project

Proposed Project Area

5-Mile Buffer

CNDDB Plant Occurence

Parish's gooseberry

mesa horkelia

Peruvian dodder

southern mountains skullcap

Brand's star phacelia

southern tarplant

southern tarplant

southern tarplant

Parish's gooseberry

Nevin's barberry

Parish's gooseberry

San Bernardino aster

Plummer's mariposa-lily

Plummer's mariposa-lily

intermediate mariposa-lily

Plummer's mariposa-lily

intermediate mariposa-lily

Plummer's mariposa-lily

Plummer's mariposa-lily

Plummer's mariposa-lily

Plummer's mariposa-lily

Plummer's mariposa-lily

intermediate mariposa-lily

intermediate mariposa-lily

Plummer's mariposa-lily

lucky morning-glory

southern tarplant

California Orcutt grass

prostrate vernal pool navarretia

Detail Area

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Figure 4:
Goodrich Substation
CNDDB Plant Occurrences Map
Mesa 500 kV Substation Project

Proposed Project Area

5-Mile Buffer

CNDDB Plant Occurrence

Sonoran maiden fern
white rabbit-tobacco
Parry's spineflower
Plummer's mariposa-lily
mesa horkelia
Plummer's mariposa-lily
Greata's aster
slender-horned spineflower
Plummer's mariposa-lily
San Gabriel bedstraw
San Gabriel bedstraw
San Gabriel bedstraw
San Gabriel bedstraw
San Gabriel bedstraw
San Gabriel bedstraw
Sonoran maiden fern
Robinson's pepper-grass
mesa horkelia
Nevin's barberry
Nevin's barberry
mesa horkelia
southern tarplant
mesa horkelia
Robinson's pepper-grass
Plummer's mariposa-lily
Plummer's mariposa-lily
Braunton's milk-vetch
slender-horned spineflower
white rabbit-tobacco
Coulter's goldfields
mesa horkelia
Plummer's mariposa-lily
mesa horkelia
California saw-grass
Nevin's barberry
Plummer's mariposa-lily
Los Angeles sunflower
Greata's aster
round-leaved filaree
mesa horkelia
Parish's gooseberry
mesa horkelia
southern mountains skullcap
Peruvian dodder

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Figure 5:
Biological Resources Observations
Map 1 of 5

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary
- Hydrologic Feature
- Disturbed Riparian Woodland
- California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
- Peregrine Falcon *(Falco peregrinus)*
- Swainson's Hawk *(Buteo swainsoni)*
- Yellow Warbler *(Dendroica petechia)*
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area

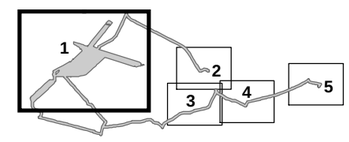

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Figure 5:
Biological Resources Observations
Map 2 of 5

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary
Hydrologic Feature
Disturbed Riparian Woodland
California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*
Loggerhead Shrike *(Lanius ludovicianus)*
Peregrine Falcon *(Falco peregrinus)*
Swainson's Hawk *(Buteo swainsoni)*
Yellow Warbler *(Dendroica petechia)*
Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

Coastal California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area

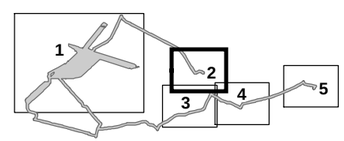

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Figure 5:
Biological Resources Observations
Map 3 of 5

Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
City Boundary
Hydrologic Feature
Disturbed Riparian Woodland
California Black Walnut *(Juglans californica)*

Special-Status Species Observations*
California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*
Loggerhead Shrike *(Lanius ludovicianus)*
Peregrine Falcon *(Falco peregrinus)*
Swainson's Hawk *(Buteo swainsoni)*
Yellow Warbler *(Dendroica petechia)*
Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*
Coastal California Gnatcatcher *(Polioptila californica)*
Least Bell's Vireo *(Vireo bellii pusillus)*

Montebello
Los Angeles County
San Gabriel Blvd
E Lincoln Ave
Scott Ave
E Los Amigos Ave
N Adobe Ave
Dam Park

Survey Area/Proposed Project Area

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Figure 5:
Biological Resources Observations
Map 4 of 5

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary
- Hydrologic Feature
- Disturbed Riparian Woodland
- California Black Walnut *(Juglans californica)*

Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
- Peregrine Falcon *(Falco peregrinus)*
- Swainson's Hawk *(Buteo swainsoni)*
- Yellow Warbler *(Dendroica petechia)*
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area

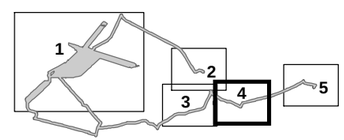

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Figure 5:
Biological Resources Observations
Map 5 of 5

Mesa 500 kV Substation Project

- Survey Area/Proposed Project Area
- City Boundary
- Hydrologic Feature
- Disturbed Riparian Woodland
- California Black Walnut *(Juglans californica)*

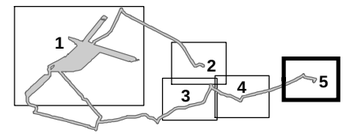
Special-Status Species Observations*

- California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*
- Loggerhead Shrike *(Lanius ludovicianus)*
- Peregrine Falcon *(Falco peregrinus)*
- Swainson's Hawk *(Buteo swainsoni)*
- Yellow Warbler *(Dendroica petechia)*
- Belding's Orange-Throated Whiptail *(Aspidoscelis hyperythrus beldingi)*
- Nevin's Barberry *(Berberis nevinii)*

Special-Status Species Nest Location*

- Coastal California Gnatcatcher *(Polioptila californica)*
- Least Bell's Vireo *(Vireo bellii pusillus)*

Survey Area/Proposed Project Area



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6.2.1 Species with Moderate Potential to Occur in the Proposed Project Area

Southern Tarplant

Southern tarplant (*Centromadia parryi* ssp. *australis*) is a CNPS 1B.1 species that occurs on the margins of marshes and swamps, seasonally moist valley and foothill grasslands, coastal scrub, and vernal pools at elevations less than 656 feet. It is an annual herb in the sunflower family (Asteraceae) that is endemic to Los Angeles, Orange, Santa Barbara, San Diego, and Ventura counties, and Baja California. This species blooms from May to November. Southern tarplant populations have been significantly reduced by habitat fragmentation due to development, grazing, and foot traffic. Three CNDDB occurrences of this species are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and two records are presumed extant. Both extant records are located within 0.5 mile of Mesa substation, within the Rio Hondo corridor. One CNDDB occurrence of this species is documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation. However, this occurrence has not been documented since 1931 and is presumed extirpated. Suitable habitat for this species occurs in the Proposed Project area in the Rio Hondo Corridor.

Plummer's Mariposa-Lily

Plummer's mariposa-lily is a CNPS CRPR 4.2 species that occurs on seasonally moist ground, in granitic or rocky substrate in chaparral, cismontane woodland, coastal scrub, lower montane forest, and valley and foothill grassland habitats at elevations between 330 and 5,600 feet. It is an uncommon bulbiferous herb in the lily family (Liliaceae) that is endemic to California and only occurs in Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. This species blooms from June to July. Plummer's mariposa-lily populations have been significantly reduced by development, and continue to decline. Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; all four records are presumed extant. Eight CNDDB occurrences of this species are documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation; seven of these occurrences are presumed extant and one is possibly extirpated. Suitable habitat for this species occurs in the Proposed Project site south of the Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor.

Intermediate Mariposa-Lily

Intermediate mariposa-lily is a CNPS List 1B.2 herbaceous bulbiferous perennial in the lily family (Liliaceae). It occurs in rocky and calcareous substrate in chaparral, coastal scrub, and valley and foothill grassland habitat at elevations from 350 to 2,800 feet and blooms from May to July. Four CNDDB occurrences of this species are documented within 5 miles of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; all four occurrences are presumed extant. Suitable habitat for this species occurs in the Proposed Project site south of the Mesa Substation, in the Montebello Hills area, and in the San Gabriel River corridor. No CNDDB occurrences of this species are documented within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.3 GENERAL WILDLIFE SPECIES

A complete list of wildlife observed in the Proposed Project area during Insignia's 2014 field visits are presented in Attachment C: Wildlife Species Observed by Insignia in June and December 2014. Reptilian species observed in the Proposed Project area during Insignia's site visits include the western fence lizard. Avian species observed include the yellow-rumped warbler (*Dendroica* coronate), European starling, northern mockingbird, house finch, mourning dove, red-tailed hawk, American crow, and common raven (*Corvus corax*). Mammalian species observed during the site visits include Audubon's cottontail rabbit (*Sylvilagus audubonii*), California ground squirrel, and coyote (*Canis latrans*).

6.4 SPECIAL-STATUS WILDLIFE SPECIES

Special-status wildlife species with the potential to occur in the Proposed Project area are listed in Table 8: Special-Status Wildlife Species. CNDDB occurrences within 5 miles of the Proposed Project area are depicted in Figure 6: Mesa Substation CNDDB Wildlife Occurrences Map and Figure 7: Goodrich Substation CNDDB Wildlife Occurrences Map. A total of 18 special-status wildlife species were originally identified on the target survey list as having the potential to occur within the Proposed Project area. Of the 18 special-status wildlife species, one occurs in specialized habitat (e.g., aquatic environments above a 1,000-foot elevation) that does not occur within the Proposed Project area. Two species have undergone drastic declines and are extirpated in much of Southern California. Thus, these three wildlife species are not expected to occur in the Proposed Project area. CNDDB occurrences for the 15 remaining special-status wildlife species were identified within 5 miles of the Proposed Project, as shown in Figure 6: Mesa Substation CNDDB Wildlife Occurrences Map and Figure 7: Goodrich Substation CNDDB Wildlife Occurrences Map. Three additional special-status wildlife species—Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and western yellow bat (*Lasiurus xanthinus*)—are included in Table 8: Special-Status Wildlife Species due to the presence of suitable habitat or the fact that they were observed in the Proposed Project area during surveys. Of the 21 special-status wildlife species included in Table 8: Special-Status Wildlife Species, the following determinations were made:

- Seven species—Belding's orange-throated whiptail, American peregrine falcon (*Falco peregrinus anatum*), coastal California gnatcatcher, least Bell's vireo (*Vireo bellii pusillus*), loggerhead shrike (*Lanius ludovicianus*), Swainson's hawk (*Buteo swainsoni*), and yellow warbler (*Setophaga petechia*)—were present

- Four species—western spadefoot (*Spea hammondii*), western pond turtle (*Emys marmorata*), western burrowing owl (*Athene cunicularia*), and southern grasshopper mouse (*Onychomys torridus ramona*)—were determined to have a moderate potential to occur

- Seven species—Blainville's horned lizard (*Phrynosoma blainvillii*), southwestern willow flycatcher (*Empidonax traillii extimus*), American badger (*Taxidea taxus*), pallid bat (*Antrozous pallidus*), San Diego black-tailed jackrabbit, western mastiff bat (*Eumops perotis californicus*), and western yellow bat (*Lasiurus xanthinus*)—were determined to have a low potential to occur

Table 8: Special-Status Wildlife Species

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Amphibians				
Southern mountain yellow-legged frog (*Rana muscosa*)	FE CE	This species is endemic to the southern Sierra Nevada and Transverse Ranges. It inhabits high mountain lake, stream, pond, and isolated pool habitat. Alpine lakes where this species occurs usually have water depths greater than 8.2 feet and have open shorelines with margins that are grassy or muddy. Breeding habitat consists of ponds, lakes, and streams that do not dry out in the summer, are deep enough that they don't freeze in the winter, and do not contain predatory fish. Breeding activity for southern mountain yellow-legged frog begins early in the spring and can range from April at lower elevations to June and July in higher elevations. Adults tend to move between breeding, feeding, and overwintering habitats throughout the course of the year. This species is typically found at elevations from approximately 1,000 to 12,000 feet.	Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site; however, these occurrences are extirpated.	No suitable habitat for this species occurs within the Proposed Project area. In addition, the Proposed Project area is located below the typical elevation range associated with this species. **No Potential**
Western spadefoot (*Spea hammondii*)	SSC	This species prefers areas of open vegetation and short grasses with sandy or gravelly soils. The western spadefoot frequents washes, floodplains of rivers, and alkali flats but can range into foothills and mountains. Throughout most of the year, this species resides in underground burrows. Breeding occurs in shallow, temporary pools formed by heavy winter rains.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs along the floodplains of the Rio Hondo and San Gabriel River corridors within the Proposed Project area. Suitable habitat also exists in the Montebello Hills within the Proposed Project area. **Moderate Potential**
Reptiles				
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	SSC	This species inhabits washes, streams, and sandy areas with rocks, patches of brush, and dry, often rocky hillsides. These lizards can also be found along ridges and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	This species was observed in the Montebello Hills area within the Proposed Project area during a December 2014 habitat assessment survey. **Present**

[9] Explanation of federal and state listing codes:

Federal listing codes:

-FE: Federally Endangered Species
-FT: Federally Threatened Species
-FC: Candidate for Federal Listing

California listing codes:

-CE: State-listed as Endangered
-CT: State-listed as Threatened
-FP: Fully protected species
-SSC: Species of Special Concern

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Blainville's horned lizard (*Phrynosoma blainvillii*)	SSC	Blainville's horned lizard is found in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. It occurs in valley-foothill hardwood, conifer woodland, riparian woodland, pine-cypress woodland, juniper woodland, and annual grassland habitats. This species inhabits open country, especially sandy areas, washes, floodplains, and wind-blown deposits. It typically forages on the ground in open areas, usually between shrubs. It is typically found at elevations up to approximately 6,000 feet.	Three CNDDB records of this species are documented within 1 mile of the Mesa Substation site; however, these records are possibly extirpated. Two CNDDB occurrences are documented within 5 miles of the Proposed Project area and both records are presumed extant. Four CNDDB occurrences have been documented within 5 miles of the Goodrich Substation site. All four occurrences are presumed extant.	Suitable habitat for this species occurs in the Proposed Project area but is fragmented and limited. Records listing this species as extant within the Proposed Project area are over 30 years old or include specimens housed in a museum with no data collection information. Much of the habitat located along the San Gabriel River corridor has since been lost to channelization. **Low Potential**
Western pond turtle (*Emys marmorata*)	SSC	This species is found throughout California west of the Sierra-Cascade crest. It is absent from desert regions except in the Mojave Desert along the Mojave River and its tributaries. It occurs in aquatic habitat with permanent or nearly permanent water in a wide variety of habitat types. Western pond turtle requires basking sites within aquatic habitat such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. This species is typically found at elevations below 4,700 feet.	Two CNDDB occurrences of this species are documented within 0.25 mile, one of which is presumed extirpated and one of which is presumed extant. Two CNDDB records are documented within 5 miles of the Mesa Substation site; however, both records are possibly extirpated. No CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site.	The Proposed Project area contains suitable aquatic and nesting habitat for this species along the San Gabriel River corridor, which has direct connectivity to known CNDDB locations. Habitat also exists along the Rio Hondo corridor. Some CNDDB occurrences may have been extirpated due to loss of aquatic habitat in other locations. **Moderate Potential**
Birds				
American peregrine falcon (*Falco peregrinus anatum*)	FP	This species is a year-round resident in California and is found in a variety of habitats. This species nests on vertical structures, such as niches in cliffs, steep banks, and ledges in close proximity to water. This species prefers to nest on coastal cliffs and bluffs; however, American peregrine falcon is also found nesting in urban areas on tall buildings and bridges. This species generally occurs in areas where an abundant food source is present, such as seabird colonies, waterfowl concentrations, or urban pigeons. This species typically forages in open habitats. Transient and wintering birds occur most frequently at lower elevations, but they have occurred from sea level to over 8,000 feet. Breeding generally occurs in mountainous and coastal areas, and egg-laying generally occurs from February to March.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence of this species is documented within 5 miles of the Goodrich Substation site. This record is presumed extant.	Because tall vertical structures and open water habitats are limited near the Proposed Project area, only marginal nesting habitat for American peregrine falcon occurs. However, this species was observed on the Mesa Substation site and east of the Rio Hondo corridor during surveys conducted for the TRTP. No nest was associated with these observations; this species was likely foraging in or flying through the Proposed Project area. **Nesting: Low Potential** **Foraging: Present**
Bank swallow (*Riparia riparia*)	CT	Bank swallow is a migratory species spending the winter months in Central and South America. It is a colonial nester in lowland river bank habitats and coastal bluffs. This species nests in earthen banks and bluffs, as well as in sand and gravel pits, primarily in riparian habitats. In its present range in California, this species primarily nests in steep earthen river banks that are subject to frequent water erosion. Nest sites consist of burrows dug into a vertical earthen bank to a depth of 18 to 36 inches. Breeding typically occurs from late March to mid-July. This species forages a few inches over water, or within grassland and certain croplands immediately adjacent to their nest colonies.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site; however, both records are extirpated. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1894 and is extirpated.	Habitat for this species occurs in the Proposed Project area, but this species is known by the CDFW to be extirpated from all of Southern California. **No Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Coastal California gnatcatcher (*Polioptila californica californica*)	FT SSC	Coastal California gnatcatcher is an obligate, permanent resident of coastal sage scrub vegetation. It makes limited use of adjacent habitats outside of the breeding season. The species typically occurs in areas dominated by California sagebrush and California buckwheat. Other shrubs in the coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include brittlebrush (*Encelia californica*), deerweed (*Lotus scoparius*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*).. The species is restricted to elevations from sea level to approximately 2,000 feet. Coastal California gnatcatcher breeds from February to late August, but most of the breeding occurs between mid-March and mid-May.	Two CNDDB occurrences of this species are documented within 0.25 mile of the Mesa Substation site, and three CNDDB occurrences are documented within 5 miles of the Mesa Substation site. All five records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site; however, this occurrence was recorded in 1928 and is extirpated.	Critical habitat for this species occurs in the Montebello Hills and San Gabriel River corridor within the Proposed Project area. Coastal California gnatcatchers were observed foraging and nesting within marginal habitat at the Mesa Substation site during the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys. In addition, this species was observed foraging at multiple locations in the Montebello Hills, the Rio Hondo corridor, and the San Gabriel River corridor. **Nesting: Present** **Foraging: Present**
Least Bell's vireo (*Vireo bellii pusillus*)	FE CE	Least Bell's vireo is a rare and local summer visitor from mid-March to the end of August and ranges from sea level in coastal areas to approximately 1,500 feet in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mulefat scrub, and cottonwood-willow forests. During the breeding season, this species may forage in adjacent upland habitats. Little is known about this species' winter habitat, but it is not exclusively dependent on riparian woodland during winter. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palm groves and hedgerows associated with agricultural fields and rural residential areas. Breeding typically occurs from late March to late September.	One CNDDB occurrence of this species is documented within 0.25 mile of the Mesa Substation site. This record is presumed extant. Five CNDDB occurrences are documented within 5 miles of the Mesa Substation site, three of which are possibly extirpated and two of which are presumed extant. Observations of this species including one pair were recorded by Whittier Narrows Nature Center staff at three locations within the Whittier Narrows Recreation Area between April and July 2014. Three CNDDB occurrences are documented within 5 miles of the Goodrich Substation site. However, two occurrences were recorded in 1923 and 1895 and are possibly extirpated. The third was recorded in 1924 and is presumed extant.	Suitable habitat for least Bell's vireo nesting and foraging occurs in the Montebello Hills, and along the San Gabriel River corridor within the Proposed Project area, where this species is known to occur. This species was observed nesting and foraging in the Mesa Substation site, the Montebello Hills, the Rio Hondo corridor and the San Gabriel River corridor during surveys conducted for the TRTP. **Nesting: Present** **Foraging: Present**
Loggerhead shrike (*Lanius ludovicianus*)	SSC	Loggerhead shrike is present year-round throughout California. This species typically breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. They require tall shrubs, trees, fences, or powerlines for hunting perches, nest placement, territorial advertisement, and pair maintenance. They also require open areas of short grasses, forbs, or bare ground for hunting. Impaling sites—such as sharp, thorny plants or barbed wire fences—are important for this species to manipulate or store prey. Breeding in Southern California typically occurs from as early as January to July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for this species occurs in the Montebello Hills and the San Gabriel River corridor within the Proposed Project area. Breeding pairs have declined extensively within Los Angeles County and are now rare. This species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Proposed Project area. **Nesting: Low Potential** **Foraging: Present**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE CE	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or underlain by saturated soil. Common tree and shrub species comprising nesting habitat includes willows, mulefat, box elder (*Acer negundo*), stinging nettle (*Urtica* spp.), blackberry (*Rubus* spp.), cottonwood (*Populus* spp.), arroweed (*Tessaria sericea*), tamarisk (*Tamarix ramosissima*), and Russian olive (*Eleagnus angustifolia*). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet, but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One of these occurrences is also documented within 0.25 mile of the Goodrich Substation site.	Suitable breeding or foraging habitat for this species occurs in the Proposed Project area; however, the occurrences near these areas were recorded in 1894 and 1906 when more riparian habitat would have been present. **Low Potential**
Swainson's hawk (*Buteo swainsoni*)	CT	Swainson's hawk breeds in the western U.S. and Canada and winters in South America. This species breeds in trees within mature riparian forests, oak groves, and in mature roadside trees in close proximity to large, open expanses of suitable foraging habitat. Over 85 percent of documented Swainson's hawk nests trees are often found in riparian systems; therefore, this habitat type is likely very important. Suitable foraging habitat includes native grassland or lightly grazed dryland pasture, alfalfa and other hay crops, and row crops. Swainson's hawk does not forage in vineyards, orchards, or cotton fields because prey is not available in these areas during most of the breeding season.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1880 and is possibly extirpated. This occurrence is also documented within 5 miles of the Goodrich Substation site.	Marginal habitat for nesting Swainson's hawk occurs in the Proposed Project area primarily within non-native woodland; however, nesting populations in the Los Angeles Basin are now considered extremely rareThis species was observed within the Mesa Substation site during surveys conducted for the TRTP. No nest was associated with this species observation; this species was likely foraging in or flying through the Proposed Project area during migration. **Nesting: No Potential** **Foraging: Present**
Western burrowing owl (*Athene cunicularia*)	SSC	Western burrowing owl lives in dry, open areas with no trees and short grass. The species is found in golf courses, cemeteries, airports, vacant lots, university campuses, pastures, and prairie dog (*Cynomys* spp.) towns. It nests in burrows that are often dug by a small mammal, especially the California ground squirrel. Western burrowing owl is generally found at elevations from approximately 200 to 5,000 feet. This species breeds from March to August.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both records are presumed extant. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1895 and is presumed extant.	Suitable habitat for this species occurs in grassland vegetation where burrows are present within the Proposed Project area. No western burrowing owls or western burrowing owl sign (i.e., feathers, pellets, or whitewash) were observed during the 2009 and 2010 focused burrowing owl surveys conducted for the TRTP, or during the 2014 habitat assessment surveys. **Moderate Potential**
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FC CE	Western yellow-billed cuckoo arrives in California as early as May and departs by mid-September. This species prefers to nest in open woodlands with clearings and dense scrubby vegetation, often along water. Breeding habitat generally consists of mixed old growth riparian forests consisting of willow and cottonwood. Breeding generally occurs in the summer between May and August at elevations below 2,500 feet.	There is one CNDDB occurrence of this species documented within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	No suitable habitat for this species occurs in the Proposed Project area. **No Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Yellow warbler (*Setophaga petechia*)	SSC	Yellow warbler occurs as a migrant and summer resident in California. This species generally occupies riparian vegetation in close proximity to water along streams and wet meadows. They are often associated with willow and cottonwood trees in riparian areas. Breeding generally occurs from April to late July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable nesting habitat for yellow warbler occurs in the Rio Hondo and San Gabriel River corridors within the Proposed Project area; however, the habitat is fragmented. This species was observed within the Mesa Substation site, in the Montebello Hills, and in Rio Hondo and San Gabriel River corridors during surveys conducted for the TRTP. No nest was associated with these observations. **Nesting: Low Potential** **Foraging: Present**
Mammals				
American badger (*Taxidea taxus*)	SSC	American badger occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. The species is also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. It is sometimes found at elevations up to 12,000 feet, but is usually found in the Sonoran and Transition life zones (elevations lower and warmer than those characterized by coniferous forests). American badgers are occasionally found in open chaparral (with less than 50-percent plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 feet to 10 feet in depth and 4 feet to 6 feet in width. Breeding generally occurs between December and February and cubs are born between March and April.	There is one CNDDB occurrence of this species within 5 miles of the Mesa Substation site. This record is presumed extant. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Suitable habitat for American badger occurs within the Proposed Project area; however, no burrows or dens of suitable size for American badger were observed during field surveys conducted by Insignia in June 2014 or December 2014. **Low Potential**
Pallid bat (*Antrozous pallidus*)	SSC	Pallid bat inhabits deserts, grasslands, shrublands, woodlands, and forests. It is generally found in the Sonoran life zone, at elevations from 100 to 7,000 feet. It is most commonly found in open, dry habitats with rocky areas for roosting. The species roosts in rocky outcrops, snags, and abandoned man-made structures. Pallid bat mating may occur as early as October and continues through February.	There are two CNDDB occurrences of this species within 5 miles of the Mesa Substation site. Both occurrences were recorded before 1932 and are presumed extant. These two occurrences, along with three other CNDDB occurrences of this species, are also documented within 5 miles of the Goodrich Substation site. All five occurrences were recorded before 1932.	Marginally suitable habitat for foraging pallid bats and man-made structures for roosting pallid bats are present within the Proposed Project area. **Low Potential**
San Diego black-tailed jackrabbit (*Lepus californicus bennettii)*	SSC	San Diego black-tailed jackrabbit generally occurs in open areas or semi-open country with scattered low shrubs. It typically occurs in grasslands, agricultural fields, or sparse coastal sage scrub, at elevations ranging from sea level to 6,000 feet. It is generally not found in chaparral or woodland habitats. The length of the breeding season depends on the duration and severity of winter. In California, this species can breed throughout the year.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	The Proposed Project area falls within the range of this species. Suitable habitat for this species occurs throughout the natural areas of the Proposed Project area. **Low Potential**

Species Name	Listing Status[9]	Life History	Known Locations	Potential to Occur
Southern grasshopper mouse (*Onychomys torridus ramona*)	SSC	Southern grasshopper mouse occurs in desert areas, especially in scrub habitats with friable soils for digging. This species' preferred habitat consists of alkali desert scrub and desert scrub habitat; however, it can also be found in succulent shrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitat. This species is uncommon in valley foothill and montane riparian habitats. The peak breeding season for this species is from May to July, but it may start breeding as early as January under ideal conditions.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation site. This occurrence was recorded in 1904 and is presumed extant.	Suitable habitat for this species occurs in the Proposed Project area. **Moderate Potential**
Western mastiff bat (*Eumops perotis californicus*)	SSC	Western mastiff bat inhabits arid and semi-arid lowlands in the Lower Sonoran life zone of California at elevations from 100 to 4,000 feet. This species occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodland, coastal scrub, annual and perennial grassland, palm oases, chaparral, desert scrub, and urban habitats. The species primarily roosts in crevices in vertical cliffs—usually granite or consolidated sandstone—and in broken terrain with exposed rock faces. It is also found occasionally in high buildings, trees, and tunnels. Western mastiff bat roost sites may change from season to season. Due to its large size, it needs vertical faces to drop from in order to take flight. Western mastiff bat nursery roosts can be found in tight rock crevices. Breeding likely occurs from April through September.	One CNDDB occurrence of this species is documented within 5 miles of the Mesa Substation site. This record is presumed extant. Four CNDDB occurrences of this species are documented within 5 miles of the Goodrich Substation site. All four occurrences were recorded before 1958 and are presumed extant.	Marginally suitable habitat for western mastiff bat occurs within palms and buildings in the Proposed Project area. **Low Potential**
Western yellow bat (*Lasiurus xanthinus*)	SSC	Western yellow bat occur in palm oases, but may also use ornamental palms in landscaping. In California, this species appears to roost exclusively in skirts of palm trees and is limited in its distribution by the availability of palm habitat. Yellow bats likely do not hibernate, as activity has been observed year-round. Breeding likely occurs from late April through July.	No CNDDB occurrences are documented within 5 miles of the Mesa Substation site. No CNDDB occurrences are documented within 5 miles of the Goodrich Substation site.	Marginally suitable habitat for western yellow bat occurs within ornamental palms in the Proposed Project area. **Low Potential**

Sources: CNDDB 2014, CDFW 2011, USFWS 2014

Figure 6:
Mesa Substation
CNDDB Wildlife Occurrences Map

Mesa 500 kV Substation Project

Proposed Project Area

5-Mile Buffer

CNDDB Wildlife Occurrence

southwestern willow flycatcher

western mastiff bat

Swainson's hawk

southwestern willow flycatcher

pallid bat

pallid bat

least Bell's vireo

bank swallow

coast horned lizard

western yellow-billed cuckoo

western pond turtle

southwestern willow flycatcher

coast horned lizard

burrowing owl

western pond turtle

American badger

western pond turtle

western pond turtle

coastal California gnatcatcher

least Bell's vireo

coastal California gnatcatcher

least Bell's vireo

coast horned lizard

coast horned lizard

bank swallow

least Bell's vireo

least Bell's vireo

coastal California gnatcatcher

burrowing owl

coast horned lizard

least Bell's vireo

western spadefoot

coastal California gnatcatcher

coastal California gnatcatcher

Detail Area

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

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Figure 7:
Goodrich Substation
CNDDB Wildlife Occurrences Map

Mesa 500 kV Substation Project

Proposed Project Area

5-Mile Buffer

CNDDB Wildlife Occurrences

southern mountain yellow-legged frog

coast horned lizard

coast horned lizard

southern mountain yellow-legged frog

coast horned lizard

southern grasshopper mouse

southern mountain yellow-legged frog

southern mountain yellow-legged frog

western mastiff bat

least Bell's vireo

coast horned lizard

pallid bat

least Bell's vireo

pallid bat

burrowing owl

western mastiff bat

pallid bat

western mastiff bat

American peregrine falcon

bank swallow

coastal California gnatcatcher

southwestern willow flycatcher

western mastiff bat

Swainson's hawk

pallid bat

least Bell's vireo

pallid bat

Detail Area

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- Three species—southern mountain yellow-legged frog (*Rana muscosa*), bank swallow (*Riparia riparia*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)—were determined to have no potential to occur

A detailed discussion regarding local populations, habitat requirements, and life history is provided in the following subsection for the wildlife species that are present in the Proposed Project area.

6.4.0 Species Present in the Proposed Project Area

Belding's Orange-Throated Whiptail

Belding's orange-throated whiptail is a state SSC and frequents dry, often rocky hillsides, ridges and valleys that support coastal sage scrub, open chaparral, dry washes, and sparse grasslands mixed with sage scrub species. It is found an elevation range that extends from near sea level to approximately 3,430 feet. Breeding usually takes place in May, although it has occasionally been observed in July. This species was observed in the Montebello Hills section along North Lincoln Avenue during Insignia's December 2014 survey, as depicted in Figure 5: Biological Resources Observations Map. This species was observed basking near a shrub along the roadside, when the weather was clear and sunny. No CNDDB occurrences were recorded within 5 miles of the Proposed Project area.

American Peregrine Falcon

The American peregrine falcon is a California Fully Protected species. This species is found on all continents but Antarctica. Historically, the American peregrine falcon occurred throughout most of California. Brought to near-extinction by the widespread use of the pesticide DDT, the peregrine falcon was listed as endangered under the FESA. This species has slowly been recovering in California and elsewhere due to legislation that banned the use of DDT in the U.S. By 1990, the population in California had increased to over 100 breeding pairs. In 1999, the American peregrine falcon was delisted from the FESA. The American peregrine falcon has since reoccupied much of its historic breeding range in California, which now includes the central and southern California coast, inland northern Coast Ranges, Klamath Mountains, Cascade Ranges, and the Sierra Nevada. Its migration and winter range includes the West Coast from the Oregon border to the Mexican border and into the adjacent mountains.

American peregrine falcon is adapted to open habitat in all seasons. This species shows a preference for breeding and nesting in sites such as niches in cliffs, steep banks, and ledges. Nest sites usually provide a panoramic view of open country, are near water, and are associated with local abundance of passerine, waterfowl, shorebird, or seabird prey. Coastal cliffs and bluffs are favored nesting sites in California. This species is also found in urban areas and uses tall buildings, bridges, and other structures for nesting. This species has been known to nest at elevations as high as 10,000 feet, but most occupied nest sites are below 4,000 feet. The breeding season for this species occurs from February through June. The American peregrine falcon was observed at four locations within developed/disturbed habitat and ruderal habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. In addition, this species was observed along Durfee Avenue, just east of the Rio Hondo corridor. No nest was associated with these species observations and only limited nesting habitat is present within the Proposed Project area, primarily in the form of

buildings or other man-made structures. One CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a federally threatened species and a state SSC. This species is a non-migratory songbird. In the U.S., coastal California gnatcatcher is found west of the Transverse and Peninsular ranges in coastal Southern California. This species is primarily found at elevations below 800 feet along the coast and up to 1,600 feet inland (Atwood and Bontrager 1992). The largest populations of this species are located in San Diego, Orange, and Riversides counties, with smaller populations located in Los Angeles County, southwestern San Bernardino County, and southern Ventura County (Atwood and Bontrager 2001). As of 1990, the coastal California gnatcatcher population in California was estimated at 2,000 or fewer pairs (USFWS 2010a). The coastal California gnatcatcher occurs in the coastal sage scrub vegetation communities of southern California, especially in locations dominated by California sagebrush and California buckwheat. Other shrubs in coastal sage scrub vegetation communities occupied by coastal California gnatcatcher include California bush sunflower (*Encelia californica*), brittlebush (*Encelia farinosa*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber*).

The breeding season for coastal California gnatcatcher extends from approximately February through August, with peak nesting activity occurring from mid-March through mid-May. Incubation takes 14 days. The young fledge at eight to 13 days of age and are dependent on their parents for up to three or four weeks; however, fledglings may associate with their parents for several months (USFWS 1997). Foraging by coastal California gnatcatcher primarily consists of gleaning sessile prey from foliage while quickly moving through branches of shrubs. Larger prey items are beaten against a branch before being swallowed whole or fed to juveniles (Atwood and Bontrager 2001).

Critical habitat for coastal California gnatcatcher occurs within the Proposed Project area along a 1.1 mile length of the proposed telecommunications line route that traverses the Montebello Hills and the Rio Hondo and San Gabriel River corridors, as depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map. Two CNDDB occurrences have been documented within 0.25 mile of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and one CNDDB occurrence has been documented within 5 miles of the Goodrich Substation site.

During the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys, this species was observed foraging and nesting within the Mesa Substation, as shown in Figure 5: Biological Resources Observations Map. At this location, coastal California gnatcatcher was observed in ruderal vegetation that would be considered marginal for this species, and in a small patch of coastal sage scrub on the southeastern margin of the Mesa Substation site. Coastal California gnatcatcher was also observed foraging in and east of the Montebello Hills and in the Rio Hondo and San Gabriel River corridors, in coastal sage scrub, mulefat scrub, ruderal, non-native woodland, and southern sycamore-alder riparian woodland.[10]

[10] Additional records of coastal California gnatcatcher observations from 2014 were provided to Insignia biologists by Whittier Narrows Nature Center staff.

Figure 8:
Mesa Substation Critical Habitat and Significant Ecological Areas Map

Mesa 500 kV Substation Project

- Proposed Project Area
- 5-Mile Buffer
- Coastal California Gnatcatcher Critical Habitat
- County of Los Angeles Significant Ecological Area (SEA)

SOUTHERN CALIFORNIA EDISON
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Least Bell's Vireo

Least Bell's vireo is a federally and state endangered migratory songbird species. The current breeding distribution for this species is restricted to Monterey, San Benito, and Inyo counties, as well as numerous small populations south of the Tehachapi Mountains in California and portions of northern Baja California in Mexico. Least Bell's vireo is an obligate riparian species during the breeding season and prefers early successional habitat. This species typically inhabits structurally diverse woodlands along watercourses, including cottonwood and willow forests, oak woodlands, and mulefat scrub. The presence of dense cover within 3 to 6 feet of the ground is where nests are typically placed, and a dense, stratified canopy for foraging also appears to be an important factor for least Bell's vireo breeding. Least Bell's vireo nest placement tends to occur in openings within the riparian woodland and along the riparian edge. Nests are placed in a variety of plant species, including willows, mulefat, Fremont's cottonwood, California sycamore, coast live oak, and several herbaceous species. Although least Bell's vireos are tied to riparian habitat for nesting, they have been observed foraging within adjacent upland habitats (up to 200 feet away). This species typically breeds from late March to late September.

This species was observed at multiple locations within the Proposed Project area. Two least Bell's vireo nests were identified within the Rio Hondo corridor during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. In addition, this species was observed foraging in the Mesa Substation site, the Montebello Hills, and the Rio Hondo corridor and the San Gabriel River corridor. This species has also been documented as nesting in the Whittier Narrows Natural Area in the San Gabriel River corridor.[11] Six CNDDB occurrences have been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One CNDDB occurrence is documented within 5 miles of the Goodrich Substation.

Loggerhead Shrike

The loggerhead shrike is a state SSC that is present year-round throughout most of the California range. Loggerhead shrike breeds mainly in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground. This species requires tall shrubs or trees, as well as fences or power lines, for hunting perches, territorial advertisement, and pair maintenance. Loggerhead shrikes require open areas of short grasses, forbs, or bare ground for hunting. Nests are placed in large shrubs or trees. This species also requires impaling sites—such as barbed wire fences or sharp, thorny plants—to manipulate or store prey. In Southern California, this species typically breeds from as early as January to July.

This species was observed within the developed/disturbed habitat and ruderal habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nest was associated with this species observation; therefore, this species was likely foraging in or flying through the Proposed Project area. Although suitable habitat exists for this species within the Proposed Project area, it has been documented that breeding pairs within Los Angeles County have declined drastically (CDFG 2008). Thus, this habitat likely would only be used for foraging. No CNDDB occurrences have been documented

[11] Additional records of least Bell's vireo observations from 2014 were provided to Insignia biologists by Whittier Narrows Nature Center staff.

within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; or within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Swainson's Hawk

Swainson's hawk is a state-listed threatened large, broad-winged buteo that frequents open country. It occurs in California during the breeding season from March through September. Swainson's hawks winter in South America and Mexico. This species primarily consumes insects and small rodents while foraging in large, open plains, fields, pastures, and grasslands. Hay, grain, and most row crops also provide suitable foraging habitat during at least part of the breeding season. Vineyards and orchards are unsuitable because prey is scarce or unavailable due to vegetation density (Estep 1989). Swainson's hawks usually nest in large trees, preferring native species such as valley oak, Fremont's cottonwood, willow, sycamores (*Platanus* spp.), and walnuts. Most nest sites are found in riparian habitats, but the species may also use mature roadside trees, isolated individual trees in agricultural fields, small groves of oaks, and trees around farmhouses (Schlorff and Bloom 1983). Nest sites are generally adjacent to or within easy flying distance to suitable foraging habitat.

This species was observed on two separate occasions within developed/disturbed nursery habitat on the Mesa Substation site during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nests were associated with these species observations. The observations occurred in February and April, when this species is known to migrate. The site is located along a known migration route for Swainson's hawks; therefore, this species was likely foraging or flying through the Mesa substation. There is one CNDDB occurrence of this species nesting within 5 miles of the Mesa Substation site; however, this occurrence was recorded in 1880. Marginally suitable habitat for nesting exists in non-native woodland within the Proposed Project area; however, this species has long been considered extirpated from breeding within southern California. The CDFG conducted a statewide inventory project for Swainson's hawk breeding pairs in 2005 and 2006 (CDFG 2007) and although they include a current breeding range that extends into southern California, they did not detect any pairs south of Madera County. The inventory classifies the southern portion of the range as "sparse," indicating that some pairs may exist but are too rare to effectively sample. Due to the rarity of breeding Swainson's hawks in the Los Angeles area and the marginal breeding habitat quality, this species is considered to have no potential to breed within or near the Proposed Project site.

Yellow Warbler

Yellow warbler is a state SSC. This species occurs in California as a migrant and summer resident from late March through early October. This species may be found at elevations up to 9,000 feet. Yellow warbler generally occupies riparian vegetation in close proximity to water along streams and in wet meadows (Lowther et al. 1999). This species is often found in willows and cottonwoods; however, in California they are also found in numerous other species of riparian shrubs or trees. The yellow warbler is a generalist forager and appears to adapt its foraging to the variation in local vegetation structure (Petit et al. 1990). In California, the yellow warbler makes several nesting attempts throughout the breeding season and typically produces only one brood per year. This species typically breeds from April to late July.

This species was observed within non-native woodland habitat on the Mesa Substation site, and ruderal, scrub and woodland habitat in the Montebello Hills and Rio Hondo and San Gabriel River corridors during surveys conducted for the TRTP, as shown in Figure 5: Biological Resources Observations Map. No nest was associated with these species observations. No suitable nesting habitat is present in the Mesa Substation site; Suitable nesting habitat is present occurs in the Rio Hondo and San Gabriel River corridors within the Proposed Project area. No CNDDB occurrences for this species have been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; or within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.4.0 Species with a Moderate Potential to Occur in the Proposed Project Area

Western Spadefoot

Western spadefoot is a state SSC and occurs in a variety of vegetation communities, including open grasslands and woodlands in areas of seasonally ponded water. This species prefers open areas with sandy or gravel-laden soils. Vernal pools, rain pools, or ponds that do not contain bullfrogs, fish, or crayfish are essential for breeding and egg-laying. This species spends most of its time underground, but often emerges during the rainy season.

Habitat for this species can be found along the Rio Hondo and San Gabriel River corridors within the Proposed Project area. Open areas of scrub habitat within the Montebello Hills where water may puddle during the rainy season may also provide habitat. One CNDDB occurrence of this species has been documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One occurrence has been documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Western Pond Turtle

The western pond turtle is a state SSC and usually occurs in areas of calm freshwater environments, but can also occur in brackish and saltwater for short periods of time. It occupies a wide variety of aquatic habitats, including ponds, lakes, rivers, streams, marshes, sloughs, and wetlands. This species digs nests and occupies upland habitats in woodlands and grasslands, usually close to water. Sexual maturity is reached at a minimum of six years old. Approximately five to 13 eggs are typically laid from April through August, up to 0.5 mile from water. Eggs are generally laid once per year, but can be laid twice per year in some instances.

The Proposed Project area contains suitable aquatic and nesting habitat for this species along the San Gabriel River corridor, which has direct connectivity to known CNDDB locations. Habitat also exists along the Rio Hondo corridor. Two CNDDB occurrences of this species have been documented within 0.25 mile of the Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and two CNDDB occurrences have been documented within 5 miles. No CNDDB occurrences were documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

Western Burrowing Owl

The western burrowing owl is a state SSC and is found in dry, open habitats such as grasslands and prairies with low-growing or no vegetation, where it occupies underground burrows,

typically those of the California ground squirrel. It can also occur in open areas of farmland, levee banks, and other disturbed or managed habitats where burrows or burrow-like refuges (e.g., small-diameter pipes, rock piles with voids, or similar hollow spaces) are present. The species breeds from February 1 through August 30. Young are capable of full flight at six weeks of age and are fed by parents for approximately one year.

Suitable habitat for this species exists within the Proposed Project area in grassland vegetation where burrows are present. Focused burrowing owl surveys were conducted for the TRTP during 2009 and 2010. Although the surveys did not find any burrowing owls or sign of burrowing owls, they were limited to a small portion of the Proposed Project area. Two CNDDB occurrences of this species are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines. One CNDDB occurrence is documented within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

Southern Grasshopper Mouse

The southern grasshopper mouse is a state SSC and inhabits desert areas, especially scrub habitats with friable soils for digging. This species can be found in a variety of habitats, including desert scrub, alkali desert scrub, and succulent shrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitat. Breeding for this species peaks from May to July, but it may breed as early as January under ideal conditions.

Suitable habitat for this species occurs in the Proposed Project area within the Montebello Hills, and along the Rio Hondo and San Gabriel River corridors. No CNDDB occurrences are documented within 5 miles of Mesa Substation and the associated transmission, subtransmission, distribution, and telecommunications lines; and one CNDDB occurrence is documented within 5 miles of the temporary 220 kV line loop-in at Goodrich Substation.

6.5 SENSITIVE NATURAL COMMUNITIES

6.5.0 Special-Status Natural Communities

Special-status natural communities are defined as communities that are of limited distribution statewide or within a county or region, and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status species or their habitats. The most current version of the CDFG's List of California Terrestrial Natural Communities indicates which natural communities are of special status (CDFG 2003). Communities with a state ranking of 1 to 3 are considered special-status. The rankings are defined as follows:

- S1, Critically Imperiled: Critically imperiled in the State because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province

- S2, Imperiled: Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province

- S3, Vulnerable: Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation

6.5.1 Riparian Communities

Many riparian communities are considered sensitive natural communities in California because of the habitat they provide for special-status plant and wildlife species and their limited distribution in California. Riparian vegetation occurs along perennial or intermittent drainages that typically are subject to seasonal flooding. Most natural riparian vegetation in Southern California has been lost or degraded by the following:

- Land use conversions to agricultural, urban, and recreational uses
- Channelization for flood control
- Sand and gravel mining
- Groundwater pumping
- Water impoundments

Disturbed riparian woodland was documented along ephemeral drainages in the vicinity of Mesa Substation and East Markland Drive. This vegetation community is highly disturbed and consists of a preponderance of non-native species, including Brazilian pepper tree, date palm, and Mexican fan palm. Only a few native species were present, including willow and mulefat. As a result of its disturbed nature, this vegetation community would not be considered a sensitive habitat.

Several stands of southern sycamore-alder riparian woodland occur within the Rio Hondo and San Gabriel River corridors. The southern sycamore-alder riparian woodland association is currently designated by the CDFW as S3 or rarer.

6.5.2 California Walnut Woodland

California walnut woodland was identified within the Proposed Project area, specifically in the Montebello Hills and the San Gabriel River corridor and. California walnut woodland is regarded by the CDFW as an S3 vegetation type.

6.6 CRITICAL HABITAT

Under the FESA, and to the extent prudent and determinable, the USFWS is required to designate critical habitat for endangered and threatened species (16 U.S.C. § 1533 [a][3]). Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. The critical habitat designation delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species.

Critical habitat within 5 miles of the Proposed Project area is depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map and Figure 9: Goodrich Substation Critical Habitat Map. Critical habitat for coastal California gnatcatcher is present within the Proposed Project area, specifically in the Montebello Hills and the Rio Hondo and San

Gabriel River corridors. Critical habitat for Braunton's milk-vetch (*Astragalus brauntonii*) is present within 5 miles of the temporary 220 kV loop-in at Goodrich Substation.

6.7 WILDLIFE MIGRATION CORRIDORS

Wildlife corridors are defined as areas that connect suitable habitat in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features—such as canyon drainages, ridgelines, or areas with vegetation cover—provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high-population-density areas; and facilitate gene flow between populations. Wildlife corridors are considered sensitive by resource and conservation agencies.

Terrestrial wildlife species tend to travel along natural drainages or stretches of land that simultaneously provide protective cover from predators and a foraging source. The Proposed Project area contains one drainage supporting riparian habitat that could provide cover for migrating wildlife. In addition, designated critical habitat and scrub vegetation communities are located within the Proposed Project area, which have direct connectivity to larger stretches of similar habitat. This could provide local migration corridors for birds, mammals, and reptiles while providing foraging opportunities.

The Proposed Project is located in the Pacific Flyway, a major north-south avian migratory corridor that extends along the West Coast from Alaska to Patagonia, and provides suitable foraging habitat for many resident and migratory avian species. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas and, therefore, is utilized by an abundance of bird species during migration. The Rio Hondo and San Gabriel River corridors and the Montebello Hills would support a number of avian species utilizing the Pacific Flyway.

6.8 HCP/NCCP

Based on a review of the USFWS Conservation Plans and Agreements Database (USFWS 2013) and the CDFW NCCP program (CDFW 2013), it was determined that the Proposed Project is not located in areas with HCP or NCCP coverage.

6.9 COUNTY OF LOS ANGELES SIGNIFICANT ECOLOGICAL AREAS

The County of Los Angeles General Plan describes SEAs as lands having important biological resources. This classification includes habitats of rare and endangered species, sites with critical fish and wildlife, relatively undisturbed areas of typical natural habitat, and regionally scarce biotic resources.

As depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map, the Puente Hills SEA is located in the Puente Hills in the southeastern portion of the Los Angeles County, a portion of which overlaps with the Proposed Project area. The SEA includes portions of the Whittier Narrows Dam Recreation Area and Flood Control Basin, and much of the undeveloped land throughout the Puente Hills. A portion of the SEA also overlaps with coastal California gnatcatcher critical habitat.

Figure 9:
Goodrich Substation
Critical Habitat Map

Mesa 500 kV Substation Project

- Proposed Project Area
- 5-Mile Buffer
- Braunton's milk-vetch Critical Habitat

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

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6.10 AQUATIC RESOURCES

The Proposed Project area contains a total of 9 water features—one intermittent drainage and 8 ephemeral drainages—that may be subject to regulation by the USACE, RWQCB, and CDFW. For the sake of consistency, nomenclature from the TRTP delineation reports was used to identify the mapped features. For this reason, 2 of the 8 ephemeral drainages have been mapped in segments. One ephemeral drainage has been mapped as three segments with feature identification (ID) numbers 7-38-S-1, 7-39-S-1, and 11-138-S-100. A second ephemeral drainage has been mapped as two segments, with feature ID numbers 11-136-S-100 and 11-136-S-101. In addition to the 9 potentially jurisdictional features, 18 non-jurisdictional features were identified, including five man-induced wetlands, 11 man-made ditches, and two erosional channels. Table 9: Potentially Jurisdictional Waters within the Proposed Project Area provides the location and approximate size of the potentially jurisdictional water features in the Proposed Project area. These features are depicted in Figure 5: Biological Resources Observations Map. All water features are described further in Attachment D: Supplemental Jurisdictional Delineation Report.

7 – IMPACTS

This section describes potential impacts to sensitive biological resources—including special-status plants and animals, and waters of the U.S. and the State—that may occur in the Proposed Project area. Each impact discussion is accompanied by APMs that would be implemented during the Proposed Project to avoid and/or reduce the potential for and/or level of impacts to each resource. A complete list of APMs that have been proposed has been included in Section 8 – Applicant-Proposed Measures. With the implementation of the APMs, all impacts are anticipated to be reduced to less than significant pursuant to CEQA.

7.0 SIGNIFICANCE CRITERIA

Potential impacts to biological resources were determined in accordance with Appendix G of the CEQA Guidelines. Impacts would be considered potentially significant if the Proposed Project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS

- Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS

- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrologic interruption, or other means

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Table 9: Potentially Jurisdictional Waters within the Proposed Project Area

Feature Number[12]	Feature Location	Mapbook Page(s)[13]	Feature Type	Approximate Size (Acreage)[14]
7-38-S-1	Within and east of Mesa Substation site	4, 5, 7	Ephemeral Drainage	0.13
7-39-S-1				0.81
11-138-S-100				0.17
7-39-S-2	Within Mesa Substation site	4, 5	Ephemeral Drainage	0.35
7-39-S-3	Southeast of Mesa Substation	5, 7	Ephemeral Drainage	0.35
7-39-S-5	Southwest of Mesa Substation	2	Ephemeral Drainage	0.24
7-39-S-6	Within Mesa Substation site	4	Ephemeral Drainage	0.04
11-94-S-2	Within Mesa Substation site	4, 6	Ephemeral Drainage	0.05
11-94-S-5	Within Mesa Substation site	3	Ephemeral Drainage	1.16
11-136-S-100	North of Mesa Substation	11	Ephemeral Drainage	0.11
11-136-S-101				0.12
7-39-S-11 (Rio Hondo)	East of Mesa Substation site	15	Intermittent Drainage	1.04

[12] Feature locations are depicted in Attachment A: Wetlands and Waters Map of Attachment D: Supplemental Jurisdictional Delineation Report.
[13] Mapbook page numbers refer to map numbers in Attachment A: Wetlands and Waters Map of Attachment D: Supplemental Jurisdictional Delineation Report.
[14] Drainage acreage is measured based on the distance between TOBs.

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

- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP

7.1 GENERAL VEGETATION IMPACTS

A variety of vegetation communities occur in the Proposed Project area. Construction of the Proposed Project would result in temporary impacts and minor permanent impacts to these vegetation communities, primarily through vegetation removal and disturbance from construction activities. Potential temporary impacts include vegetation clearing and vehicle use in work areas, pull sites, staging areas/helicopter landing zones, and contractor storage yards, as well as establishing and/or improving temporary access roads. Potential temporary impacts to vegetation communities also include the introduction or spread of noxious weeds, which outcompete native species and cause declines in native plant populations. The majority of the work would be conducted where disturbed conditions and noxious weeds are predominant. Where work would be conducted within native vegetation, impacts are anticipated to be minor, as described in the paragraphs that follow. As such, Proposed Project impacts are not anticipated to have a significant effect on native plant species.

Permanent direct loss involves long-term impacts associated with the construction of permanent Proposed Project features (e.g., new transmission towers, new poles, and a new substation). The expansion of Mesa Substation would result in the permanent removal of vegetation. Permanent vegetation impacts would also occur as a result of the construction of new poles and towers. The temporary and permanent impacts are summarized in Table 10: Vegetation Impacts.

Chapter 8.52 City Tree and Tree Protection Ordinance (Ordinance 6896§ 2) of the City of Pasadena Municipal Code protects all native, specimen, landmark, landmark-eligible, or mature trees in the City of Pasadena. This ordinance is further described in Section 4.0.1 Relevant Regulations. Coast live oak trees are present on the northwest portion of the 220 kV line loop-in at Goodrich Substation in the City of Pasadena, approximately 220 feet from potential work areas. Removal of the coast live oak trees is not anticipated. The Oak Tree Ordinance for the County of Los Angeles is designed to preserve and maintain healthy oak trees in unincorporated portions of the county. A discretionary tree permit is required by the City of Pasadena for the removal of trees protected under the ordinance. The removal of any oak trees within unincorporated portions of Los Angeles County would also require a discretionary tree permit, and removed oak trees would be replaced at a 2-to-1 ratio. However, local discretionary permits are preempted by the CPUC for projects under its jurisdiction. In accordance with APM-BIO-02, impacts to native trees would be minimized to the extent possible. Should the removal of oak trees be unavoidable within the City of Pasadena or the unincorporated portions of the County of Los Angeles, a Revegetation Plan would be prepared that incorporates the mitigation requirements of the City of Pasadena and/or the County of Los Angeles, as applicable. As a result, impacts would be less than significant.

Table 10: Vegetation Impacts

Natural Vegetation Community	Approximate Area (Acres)	Approximate Temporary Impacts (Acres)	Approximate Permanent Impacts (Acres)
Replacement of existing Lattice Steel Tower on Goodrich – Laguna Bell 220 kV Transmission Line			
Ruderal	5.40	1.11	0.00
Temporary 220 kV Loop-in at Goodrich Substation			
Coast live oak woodland	0.26	0.00	0.00
Disturbed/developed areas	8.80	1.48	0.00
Mesa Substation			
Coastal Sage Scrub	0.16	0.16	0.00
Disturbed/developed areas	54.63	4.50	50.13
Ephemeral drainages	2.50	0.68	1.82
Mulefat scrub	0.33	0.13	0.20
Non-native woodland	9.17	1.08	8.09
Riparian woodland	0.18	0.04	0.14
Ruderal	19.24	9.14	10.10
Street Light Source Conversion from Overhead to Underground			
Disturbed/developed areas	1.22	0.00	0.00
Telecom. Reroute and Additions			
California annual grassland	17.32	15.72	1.56
California walnut woodland	1.87	0.00	0.00
Coastal sage scrub	3.06	0.33	0.00
Disturbed/developed areas	240.22	92.39	2.92
Mulefat scrub	13.86	1.41	0.00
Non-native giant reed	0.15	0.00	0.00
Non-native woodland	34.24	8.59	0.27
Riparian woodland	1.19	0.37	0.02
Ruderal	47.26	33.98	1.46
Southern sycamore-alder riparian woodland	2.79	0.37	0.00
Ephemeral drainages	0.64	0.57	0.01
Intermittent drainage	1.98	0.00	0.00

Natural Vegetation Community	Approximate Area (Acres)	Approximate Temporary Impacts (Acres)	Approximate Permanent Impacts (Acres)
Man-induced wetlands	0.04	0.04	0.00
Total	**466.51**	**172.09**	**76.72**

To ensure that no vegetation impacts would occur outside of the Proposed Project area, all work activities, access routes, and laydown areas would be clearly delineated in the field to restrict crew members from accessing areas outside of the designated workspace. During construction, SCE would minimize vegetation removal where feasible, as described in APM-BIO-02. As described in APM-BIO-02 and APM-BIO-03, SCE would develop and implement a Revegetation and Monitoring Plan, if necessary, for native vegetation that may be impacted by construction activities. In addition, disturbed areas would be returned to their pre-existing contours and conditions. These APMs are presented and discussed in Section 8 – Applicant-Proposed Measures. Implementation of APMs would reduce impacts to vegetation to a less-than-significant level.

7.2 IMPACTS TO SPECIAL-STATUS PLANT SPECIES

Implementation of the Proposed Project would result in potential impacts to special-status plant species in the Proposed Project area. Two special-status plant species—California black walnut and Nevin's barberry—have been identified as present in the Proposed Project area. However, California black walnut is a CNPS CRPR 4.2 species that does not require CEQA review. California black walnut occurs in the cities of Monterey Park and Montebello, and in unincorporated areas of Los Angeles County; however, mitigation or compensation for the removal of California black walnut trees is not required by these jurisdictions. As such, impacts to California black walnut would not be considered significant.

Nevin's barberry is a federally and state-listed endangered species and a CNPS CRPR 1.2 species. As described in APM-BIO-01, Nevin's barberry would be marked or flagged and impacts to this species would be avoided during all construction activities. As such, there would be no impacts to Nevin's barberry.

Three special-status plant species—southern tarplant, Plummer's mariposa-lily and intermediate mariposa-lily—have a moderate potential to occur on within the Proposed Project area. Fifteen special-status plant species have a low potential to occur on the Proposed Project area, as listed in Table 7: Special-Status Plant Species. If present, special-status plant species could be impacted during vegetation clearing and construction of Mesa Substation. Grading or other heavy disturbance also has the potential to bury or otherwise remove topsoil, which may contain viable seeds of special-status plant species. Grading or other disturbances may also introduce invasive species into an area where special-status plant species occur. To ensure that special-status plant species are not impacted as a result of the Proposed Project, SCE would implement APM-BIO-01, by conducting pre-construction special-status plant surveys in accordance with CDFW (2009), USFWS (1996) and CNPS (2001) guidelines. In addition, as described in APM-BIO-02, SCE would develop and implement a Revegetation and Monitoring Plan, if necessary, for native vegetation that may be impacted by construction activities. The Revegetation Plan would include post-construction invasive weed management measures. As a result, the implementation of APM-BIO-01 and APM-BIO-02 would reduce impacts to special-status plant species to a less-than-significant level.

7.3 GENERAL WILDLIFE SPECIES

Construction activities could potentially impact non-sensitive wildlife species. Direct impacts to wildlife may include mortality from vehicle collisions, vegetation removal, or entrapment. Permanent impacts may include the removal of potential foraging habitat, destruction of burrows, or injury or mortality from construction activities. Temporary impacts may include the disruption of normal behavior due to a temporary increase in noise from construction equipment and vehicles. To ensure that wildlife does not become trapped in excavations or construction materials, SCE would implement additional protection for wildlife species, as described in the paragraphs that follow.

Additional Protection for General Wildlife Species

- **Worker Environmental Awareness Program Training:** Prior to construction, a qualified biologist or other qualified resource specialist would develop an environmental training for all Proposed Project personnel. The training would cover all pertinent Proposed Project APMs, permit conditions, and any other required environmental compliance measures. In addition, the environmental training would familiarize all Proposed Project personnel with special-status species that may occur within the construction areas. All Proposed Project personnel would attend the training prior to starting work on the Proposed Project. Upon completion of the training, each attendee would sign a form stating that he/she participated in the training and understood the material presented.

- **Special-Status Wildlife Species:** If a special-status wildlife species is identified on site, crews would immediately stop work and contact an on-site biological monitor and SCE. Work would not proceed in the immediate area until the animal has traveled off site on its own or has been relocated by an approved biologist. If the identified special-status wildlife species is a federally and/or state-listed species, the USFWS and/or CDFW (depending upon the listing status) would be notified.

- **Holes, Trenches, and Escape Routes for Wildlife:** All excavated, steep-walled holes or trenches more than 6 inches deep would either be covered at the end of each workday, or a ramp would be built to provide a means of escape for trapped animals. Before the holes or trenches are filled, they would be thoroughly inspected.

Implementation of these additional protection measures would reduce impacts to general wildlife species to a less-than-significant level.

7.4 IMPACTS TO SPECIAL-STATUS WILDLIFE SPECIES

7.4.0 Invertebrate Species

No special-status invertebrate species are anticipated to occur in the Proposed Project area. Therefore, no impacts to special-status invertebrate species are anticipated.

7.4.1 Fish Species

No special-status fish species are anticipated to occur in the Proposed Project area. Therefore, no impacts to special-status fish species are anticipated.

7.4.2 Amphibian Species

One special-status amphibian species—western spadefoot—has a moderate potential to occur within the Montebello Hills and the Rio Hondo and San Gabriel River corridors. This species could be crushed by construction vehicles or by vegetation removal. To ensure western spadefoot is not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires that biological monitors are present during construction in areas where this species may occur. SCE would also implement additional protection for wildlife species that would require that open trenches and excavations are covered or secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status amphibian species to a less-than-significant level.

7.4.3 Reptile Species

One special-status reptile species—Belding's orange-throated whiptail—was observed in the Proposed Project area. In addition, western pond turtle has a moderate potential to occur within the Rio Hondo and San Gabriel River corridors. These species could be crushed by construction vehicles or by vegetation removal. To ensure special-status reptile species are not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires biological monitors to monitor construction in areas where these species may occur. SCE would also implement additional protection for wildlife species (as described in Section 7.3 General Wildlife Species) that would require that open trenches and excavations are covered and secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status reptile species to a less-than-significant level.

7.4.4 Avian Species

Six special-status avian species were observed during surveys conducted for the TRTP in 2009, 2010 and 2011, and during surveys conducted by Insignia and RBC in 2014. The coastal California gnatcatcher was observed foraging and nesting in disturbed ruderal habitat in the Proposed Project area to the south of the existing Mesa Substation, on the proposed substation expansion area. In addition, the coastal California gnatcatcher was observed foraging in the Montebello Hills and the Rio Hondo and San Gabriel River corridors. The least Bell's vireo has been observed nesting along the Rio Hondo corridor within the Proposed Project area. This species has also been observed foraging in the Montebello Hills and the San Gabriel River corridor. Records of least Bell's vireo and coastal California gnatcatcher nesting observations from 2014 were also provided to Insignia biologists by the Whittier Narrows Nature Center. The remaining four species—American peregrine falcon, Swainson's hawk, loggerhead shrike, and yellow warbler—were observed foraging in the Proposed Project area. In addition, western burrowing owl has a moderate potential to occur in grassland vegetation within the Proposed Project area. Impacts to coastal California gnatcatcher, listed as threatened under the FESA; least Bell's vireo, listed as endangered under the FESA and the CESA; and other nesting birds protected by the MBTA and the California Fish and Game Code may occur as a result of

Proposed Project construction. In addition, construction could impact foraging habitat for coastal California gnatcatcher and least Bell's vireo. These impacts are described in the following subsections.

Coastal California Gnatcatcher

Permanent and direct impacts to coastal California gnatcatcher may include the removal of nesting or foraging habitat and/or the removal of some food sources. No direct take of individual birds is anticipated. Direct permanent impacts to approximately 14.21 acres of coastal California gnatcatcher nesting and foraging habitat are anticipated due to the construction of the Proposed Project, as shown in Table 11: Potential Impacts to Coastal California Gnatcatcher Habitat. Permanent impacts to coastal California gnatcatcher habitat would be to ruderal vegetation and a small area of coastal sage scrub in the Mesa Substation site. Temporary impacts of up to 12.09 acres of coastal California gnatcatcher nesting and foraging habitat are anticipated due to the construction of the Proposed Project. Temporary impacts would occur primarily along one of the proposed telecommunication line routes which traverses through designated critical habitat for this species. Temporary impacts of up to 1.69 acres of coastal California gnatcatcher critical habitat are anticipated. At this location, work would be conducted on existing subtransmission or distribution lines along an existing paved road. The location of the temporary and permanent impacts that would occur is shown in Figure 10: Potential Impacts to Suitable Coastal California Gnatcatcher Habitat Map.

Table 11: Potential Impacts to Coastal California Gnatcatcher Habitat

Location	Approximate Impact Area (Acres)	Approximate Temporary Impacts[15] (Acres)	Approximate Permanent Impacts (Acres)
Mesa Substation site	23.45	9.24	14.21
Associated transmission, subtransmission, distribution, and telecommunications lines	2.85	2.85	0.0
Totals	**26.30**	**12.09**	**14.21**
Impacts within Coastal California Gnatcatcher Critical Habitat	**1.69**	**1.69**	**0.0**

Indirect temporary impacts may include the disruption of nesting behavior due to a temporary increase in the presence of humans, dust and noise from construction equipment and vehicles.

[15] A portion of SCE's temporary impact acreage located north and west of Greenwood Avenue is located within areas analyzed by the Monterey Park Market Place Final Environmental Impact Report and found to have permanent impacts. Consequently, SCE's temporary impact acreage is estimated. This area has been condemned by the City of Monterey Park, resulting in limited use by SCE. Therefore, once the Monterey Park Market Place is developed, SCE would modify the temporary impact acreage accordingly.

Impacts would be most significant during the nesting season, which is generally March through August for this particular species. In accordance with APM-BIO-04, SCE would coordinate with USFWS to obtain necessary permits under the FESA, and would reduce impacts to coastal California gnatcatcher by implementing the following measures:

- conducting protocol-level surveys prior to the start of construction;
- implementing no-work buffers, as appropriate, if nesting birds are found;
- ensuring that a USFWS-approved biological monitor is present;
- limiting work in close proximity to active nests until after the chicks have fledged; and
- mitigating for the permanent loss of occupied coastal California gnatcatcher habitat.

In addition, SCE would implement APM-AIR-01 (as described in Section 4.3, Air Quality of the PEA), which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce impacts to coastal California gnatcatcher to a less-than-significant level.

Least Bell's Vireo

Indirect temporary impacts to least Bell's vireo would include the disruption of nesting behavior due to a temporary increase in the presence of humans, dust, and noise from construction equipment and vehicles. Impacts would be most significant during the nesting season, which is generally March through September for this particular species. In accordance with APM-BIO-05, SCE would coordinate with USFWS and CDFW to obtain necessary permits under the FESA and CESA, and would reduce impacts to least Bell's vireo by implementing the following measures:

- avoiding activities during the nesting season to the extent feasible;
- conducting protocol-level surveys prior to the start of construction;
- implementing no-work buffers as appropriate if nesting birds are found
- ensuring that a USFWS-approved biological monitor is present;
- limiting work in close proximity to active nests until after the chicks have fledged; and
- mitigating for the permanent loss of occupied least Bell's vireo habitat.

In addition, SCE would implement APM-AIR-01 as described in Section 4.3, Air Quality, which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce impacts to least Bell's vireo to a less-than-significant level.

Other Avian Species

Direct impacts are expected to occur to unoccupied nesting bird habitat through vegetation clearing and grading of suitable ground-nesting bird habitat. Indirect temporary impacts may include the disruption of nesting behavior due to a temporary increase in human presence, and noise and dust from construction equipment and vehicles. As described in APM-BIO-06, SCE would reduce impacts to nesting bird species by implementing the following measures:

- avoiding activities during the nesting season to the extent feasible;
- conducting pre-construction nesting bird surveys;
- implementing no-work buffers, as appropriate, if nesting birds are found; and
- limiting work in close proximity to active nests until after the chicks have fledged.

Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 1 of 3

Mesa 500 kV Substation Project

Survey Area/Proposed Project
Proposed Substation Perimeter Wall
City Boundary
Coastal California Gnatcatcher Habitat
Coastal California Gnatcatcher Critical Habitat
Existing Access Road (Non-Suitable Habitat)

Project Impacts

Temporary
Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

Temporary
Permanent

Survey Area/Proposed Project Area

1
2
3

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

INSIGNIA ENVIRONMENTAL

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0 250 500 Feet

Potrero Grande Dr
E Markland Dr
Greenwood Ave
Pomona Fwy State Rte 60
Via Campo St
Monterey Park
Montebello
N Montebello Blvd

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Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 2 of 3

Mesa 500 kV Substation Project

Survey Area/Proposed Project
Proposed Substation Perimeter Wall
City Boundary
Coastal California Gnatcatcher Habitat
Coastal California Gnatcatcher Critical Habitat
Existing Access Road (Non-Suitable Habitat)

Project Impacts

Temporary
Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

Temporary
Permanent

Survey Area/Proposed Project Area

1
2
3

SOUTHERN CALIFORNIA EDISON
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INSIGNIA ENVIRONMENTAL

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Figure 10:
Anticipated Impacts to Suitable Coastal California Gnatcatcher Habitat Map
Map 3 of 3

Mesa 500 kV Substation Project

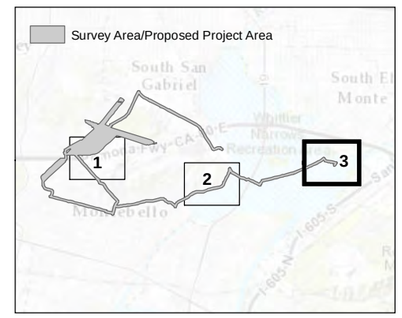
- Survey Area/Proposed Project
- Proposed Substation Perimeter Wall
- City Boundary
- Coastal California Gnatcatcher Habitat
- Coastal California Gnatcatcher Critical Habitat
- Existing Access Road (Non-Suitable Habitat)

Project Impacts

- Temporary
- Permanent

Anticipated Impacts to Coastal California Gnatcatcher Habitat

- Temporary
- Permanent



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

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In addition, SCE would implement APM-AIR-01, which would reduce fugitive dust in the construction areas. Implementation of APMs would reduce the impacts to nesting avian species to a less-than-significant level.

Permanent impacts to foraging habitat for all avian species would be limited, because the majority of habitat where permanent impacts are anticipated has been previously disturbed and is in a degraded state. Therefore, permanent construction impacts to foraging avian species would be less-than-significant.

SCE plans to incorporate avian protection measures into the Proposed Project's engineering design through the implementation of APM-BIO-07, which ensures that SCE's facilities are in compliance with APLIC's *Suggested Practices for Raptor Protection on Power Line: The State of the Art in 2006* (APLIC 2006). Implementation of this APM would reduce the impacts to avian species to a less-than-significant level.

Power lines and other structures also provide potential perching opportunities for raptor species, which can increase the potential for predation of wildlife by raptors. In areas where current perching sites are few or rare, the construction of a new power line may increase the potential for raptors perching, and thus increase predation opportunities in the area. However, due to the undergrounding of the 66 kV circuits at Mesa Substation and the prevalence of existing electrical facilities, trees and other perching structures in the area, construction of the Proposed Project is anticipated to have less-than-significant impacts on potential increased predation of smaller wildlife species.

7.4.5 Mammal Species

One special-status mammal species—southern grasshopper mouse—has a moderate potential to occur within the Montebello Hills and the Rio Hondo and San Gabriel River corridors. This species could be crushed by construction vehicles or by vegetation removal. To ensure southern grasshopper mouse is not impacted as a result of the Proposed Project, SCE would implement APM-BIO-03, which requires that biological monitors are present during construction in areas where this species may occur. SCE would also implement additional protection for wildlife species (as described in Section 7.3 General Wildlife Species) that would require that open trenches and excavations are covered or secured, and that construction materials are inspected for local wildlife. Implementation of APM-BIO-03 and the additional protection would reduce the impacts to special-status mammal species to a less-than-significant level.

7.5 IMPACTS TO SENSITIVE NATURAL VEGETATION COMMUNITIES

Two sensitive vegetation communities occur within the Proposed Project area, including southern sycamore-alder riparian woodland and California walnut woodland. Southern sycamore-alder riparian woodland association is currently designated by the CDFW as S3 or rarer. California walnut woodland is regarded by CDFW as S3. These sensitive vegetation communities could be impacted during vegetation clearing. SCE would implement APM-BIO-02, which would minimize impacts and permanent loss to sensitive vegetation communities. If impacts are unavoidable, SCE would implement a Revegetation Plan to restore vegetation to its pre-construction condition. Implementation of APM-BIO-02 would reduce impacts to sensitive vegetation communities to a less-than-significant level.

7.6 IMPACTS TO CRITICAL HABITAT

As depicted in Figure 8: Mesa Substation Critical Habitat and Significant Ecological Areas Map, approximately 3.80 acres of the Proposed Project area are designated as coastal California gnatcatcher critical habitat. The Proposed Project activities would result in approximately 1.69 acres of temporary impacts to coastal California gnatcatcher critical habitat, along a 1.1 mile length of the proposed telecommunication line route that traverses the Montebello Hills and the Rio Hondo and San Gabriel River corridors. At this location, work would be conducted on existing subtransmission or distribution lines along an existing paved road. The temporary disturbance of this critical habitat due to ground-disturbing activities could result in direct impacts to coastal California gnatcatcher. Shrubs and other vegetation used by coastal California gnatcatcher may be destroyed in these areas, resulting in the loss of foraging and nesting habitat.

In order to minimize impacts to coastal California gnatcatcher critical habitat, a Revegetation Plan would be prepared and implemented to ensure that construction areas would be restored, in accordance with APM-BIO-02. Demarcating the boundaries of construction areas along the telecommunications routes would minimize the potential for impacts to critical habitat to occur outside of approved work areas. Avoiding impacts to vegetation, when feasible, would preserve nesting and foraging habitat within critical habitat. Restoring temporarily impacted construction areas, as appropriate, would minimize the duration of impacts to critical habitat and would more quickly return these areas to near pre-construction conditions. With the implementation of this APM, impacts to coastal California gnatcatcher critical habitat would be less than significant.

7.7 IMPACTS TO WILDLIFE MIGRATION CORRIDORS

The Proposed Project would involve construction activities within an existing transmission corridor, and would include the construction of only one large, permanent structure—the proposed Mesa Substation. The proposed Mesa Substation would be constructed in an area that is disturbed and does not have potential to be used as a wildlife migration corridor. As previously discussed, up to 53 wood poles would be replaced. As these activities involve the replacement of existing wood poles, they would not create a barrier to wildlife migration corridors. The remaining Proposed Project activities would occur within small, discontinuous areas and, therefore, would not create a barrier for terrestrial species. As a result, no impacts to wildlife migration corridors are anticipated.

7.8 IMPACTS TO HCP/NCCP

Construction of the Proposed Project would not occur within an area with HCP or NCCP coverage. As a result, no impacts to areas covered under an HCP or NCCP would occur as a result of the Proposed Project.

7.9 IMPACTS TO COUNTY OF LOS ANGELES SIGNIFICANT ECOLOGICAL AREAS

A portion of construction activities associated with the Proposed Project would occur within an area designated as an SEA by the County of Los Angeles. However, these activities would occur within an existing transmission corridor and do not involve the construction of large facilities. Within the SEA, up to 53 existing wood poles could be replaced as part of the Proposed Project, depending on the results of wind-load testing. As these activities would replace existing wood

poles, no permanent impacts to the SEA are anticipated. The remaining Proposed Project activities would occur within small, discontinuous areas and therefore are not anticipated to impact the SEA. As a result, no impacts to the County of Los Angeles SEA are anticipated.

7.10 IMPACTS TO AQUATIC RESOURCES AND RIPARIAN HABITAT

The construction of the Proposed Project would result in direct temporary impacts of approximately 0.09 acre and direct permanent impacts of 0.55 acre to waters potentially under the jurisdiction of the USACE and RWQCB. Construction of the Proposed Project would also result in direct temporary impacts of approximately 1.56 acres and direct permanent impacts of approximately 2.76 acres to waters and riparian habitat potentially under the jurisdiction of the CDFW. Only ephemeral, non-wetland waters would be impacted by the Proposed Project If water features cannot be avoided, SCE would mitigate for impacts as required by the USACE, CDFW, and RWQCB, as described in APM-BIO-08 in Section 8 – Applicant-Proposed Measures, which stipulates that authorizations must be obtained from the appropriate jurisdictional agencies and mitigation must be implemented for permanent impacts to jurisdictional waters. With the implementation of this APM, impacts to jurisdictional water features would be reduced to less-than-significant levels.

A summary of temporary and permanent impact areas by water type is shown in Table 12: Water Features to be Impacted by the Proposed Project. An overview of the impacts to wetland and non-wetland water features are shown in Figure 11: Potential Impacts to Waters Map. More information is provided in Attachment D: Supplemental Jurisdictional Delineation Report. SCE would avoid on-site wetlands to the extent practicable.

Indirect impacts to wetlands and waters could also result from spillage of construction materials, as well as erosion and sedimentation. These potential impacts would be avoided and minimized through implementation of the Proposed Project's SWPPP and Spill Prevention, Control and Countermeasure Plan, which are both required by law. The SWPPP would require that vehicles be checked daily and maintained in accordance with manufacturer's specifications to minimize the potential for leaks, and refueling and maintenance of vehicles would occur at least 50 feet from the edge of any aquatic feature. In addition, SCE would implement APM-BIO-02 and APM-BIO-08 to further minimize indirect impacts to wetlands and waters. With the implementation of these APMs and with adherence to applicable regulations, impacts to jurisdictional water features would be less than significant.

Construction of the Proposed Project may also result in direct and temporary impacts to riparian vegetation, including disturbed riparian woodland and sycamore-alder riparian woodland. Riparian vegetation within the Proposed Project area are potentially under the jurisdiction of the CDFW. Proposed Project activities that could adversely affect riparian vegetation include earth-moving/grading, tree trimming, and tree removal. SCE would avoid riparian vegetation to the extent feasible. If riparian vegetation cannot be avoided, SCE would mitigate for impacts, as described in APM-BIO-08 in Section 8 – Applicant-Proposed Measures, which stipulates that authorizations must be obtained from the appropriate jurisdictional agencies and mitigation must be implemented for permanent impacts to riparian vegetation. With the implementation of these APMs, impacts to riparian vegetation would be reduced to less-than-significant levels.

Table 12: Water Features to be Impacted by the Proposed Project

Water Feature Type	Approximate Temporary Impact Area (Acres)			Approximate Permanent Impact Area (Acres)		
	USACE and SWRCB/ RWQCB	CDFW	Non-Jurisdictional	USACE and SWRCB/ RWQCB	CDFW	Non-Jurisdictional
Jurisdictional Water Features						
Ephemeral Drainage	0.09	1.05	N/A	0.55	2.56	N/A
Intermittent Drainage	0.00	0.00	N/A	0.00	0.00	N/A
Riparian Canopy	N/A	0.51	N/A	N/A	0.20	N/A
Totals	**0.09**	**1.56**	**N/A**	**0.55**	**2.76**	**N/A**
Non-Jurisdictional Water Features						
Erosional Feature	N/A	N/A	<0.01	N/A	N/A	0.01
Man-Made Ephemeral Ditch	N/A	N/A	0.26	N/A	N/A	0.98
Man-Induced Wetland	N/A	N/A	0.04	N/A	N/A	<0.01
Total	**N/A**	**N/A**	**0.30**	**N/A**	**N/A**	**0.99**

Note: N/A = Not Applicable. Waters that are potentially jurisdictional for USACE and SWRCB/RWQCB are a subset of waters that are jurisdictional for CDFW.

Figure 11:
Anticipated Impacts to Waters Map
Mesa 500 kV Substation Project

Survey Area/Proposed Project Area
Proposed Substation Perimeter Wall
City Boundary

Project Impacts
Temporary
Permanent

Anticipated Impacts to Waters
Non-Jurisdictional Permanent
Non-Jurisdictional Temporary
Jurisdictional Permanent
Jurisdictional Temporary

Los Angeles County
Monterey Park
Montebello
Hill Dr
Potrero Grande Dr
Pomona Fwy
State Rte 60
Via Campo St
N Wilcox Ave
N Montebello Blvd
Paramount Blvd

Detail Area

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8 – APPLICANT-PROPOSED MEASURES

The following APMs would be implemented by SCE in order to reduce any potential impacts to biological resources to a less-than-significant level. Specifically, the APMs have been designed to minimize or eliminate potential impacts to special-status plant and wildlife species, as well as more common native wildlife species that are present in the surrounding area of the Proposed Project. Specific implementation of these APMs is discussed with the applicable impacts described previously in Section 7 – Impacts.

- **APM-BIO-01: Special-Status Plant Species.** During the appropriate phenological periods, formal pre-construction surveys for rare plants would be conducted in areas where special-status plants have the potential to occur within the construction areas. Prior to construction, the locations of any special-status plants identified during the surveys would be marked or flagged for avoidance. This boundary would be maintained during work at these locations and would be avoided during all construction activities to the extent possible. Impacts to Nevin's barberry would be avoided. Where disturbance to these areas cannot be avoided, SCE would develop and implement a Revegetation Plan. The Revegetation Plan would include measures for transplanting and replacing special-status plant species that may be impacted by construction of the Proposed Project. This plan would also include general measures in the event that special-status plant species are encountered prior to construction of the Proposed Project as well as post-construction invasive weed management measures, where necessary, to ensure successful revegetation back to pre-construction conditions or to equivalent conditions of representative habitat immediately adjacent to the affected area.

- **APM-BIO-02: Revegetation Plan.** To the extent feasible, SCE would minimize impacts and permanent loss to riparian habitat, native trees, and other vegetation that is regulated by federal, state or local agencies, and/or that provides suitable habitat for special-status species. Impacts would be minimized at construction sites by flagging native vegetation to be avoided. If unable to avoid impacts to protected vegetation, a Revegetation Plan would be prepared in coordination with the appropriate agencies for areas of native habitat temporarily and/or permanently impacted during construction. The Revegetation Plan would describe, at a minimum, which vegetation restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Proposed Project's SWPPP) would be implemented in the Proposed Project area. The Revegetation Plan would also include the species or habitats that could be impacted, the replacement or restoration ratios (as appropriate), the restoration methods and techniques, and the monitoring periods and success criteria, as identified in each measure.

- **APM-BIO-03: Biological Monitoring.** To the extent feasible, biological monitors would monitor construction activities in areas with special-status species, native vegetation, wildlife habitat, or unique resources to ensure that such resources are avoided.

- **APM-BIO-04: Coastal California Gnatcatcher Protection.** A USFWS-approved biologist would conduct pre-construction surveys for coastal California gnatcatcher no more than seven days prior to the start of ground-disturbing activities, if this work would

commence between February 1 and August 30. Surveys for coastal California gnatcatcher would be conducted in suitable nesting habitat within approximately 500 feet of the Proposed Project area. If a breeding territory or nest is confirmed, the USFWS would be notified and in coordination with the USFWS, an exclusion buffer would be established around the nest. Construction activities in occupied coastal California gnatcatcher habitat would be monitored by a full-time USFWS-approved biologist. Unless otherwise authorized by the USFWS, no Proposed Project activities would occur within the established buffer until it is determined by the biologist that the young have left the nest. Temporary and permanent impacts to coastal California gnatcatchers and their habitat would be mitigated as required by the USFWS.

- **APM-BIO-05: Least Bell's Vireo Protection.** SCE would avoid ground-disturbing activities within suitable habitat for least Bell's vireo during the nesting season to the extent possible. In the event that activities within least Bell's vireo nesting habitat are unavoidable, a USFWS-approved biologist would conduct pre-construction surveys for least Bell's vireo no more than seven days prior to the start of ground-disturbing activities, if this work would commence between March 15 and September 30. Surveys for least Bell's vireo would be conducted in suitable nesting habitat within approximately 500 feet of the Proposed Project area. If a breeding territory or nest is confirmed, the USFWS and CDFW would be notified and in coordination with the USFWS and CDFW, an exclusion buffer would be established around the nest. Construction activities in occupied least Bell's vireo habitat would be monitored by a full-time USFWS- and CDFW-approved biologist. Unless otherwise authorized by the USFWS and CDFW, no Proposed Project activities would occur within the established buffer until it is determined by the biologist that the young have left the nest. Temporary and permanent impacts to least Bell's vireo, and their habitat would be mitigated as required by the USFWS and CDFW.

- **APM-BIO-06: Nesting Birds.** SCE would conduct pre-construction clearance surveys no more than seven days prior to construction to determine the location of nesting birds and territories, during the nesting bird season (typically February 1 to August 31, earlier for species such as raptors). An avian biologist would establish a buffer area around active nest(s) and would monitor the effects of construction activities to prevent failure of the active nest. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. Monitoring of construction activities that have the potential to affect active nest(s) would continue until the adjacent construction activities are completed or until the nest is no longer active.

- **APM-BIO-07: Avian Protection.** Electrical facilities would be designed in accordance with APLIC's *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (APLIC 2006).

- **APM-BIO-08**: **Compensation for Permanent Impacts.** Permanent impacts to all jurisdictional water resources would be compensated at a 1:1 ratio, or as required by the USACE, CDFW, and RWQCB.

9 – PERMITS AND AUTHORIZATIONS

Several regulatory approvals, authorizations, or permits are required for the Proposed Project, as provided in Table 13: Anticipated Biological Resource Permits and Authorizations. These approvals may include conditions that afford additional protection to species and/or their habitat. In addition to implementing the APMs for the Proposed Project, SCE would comply with all mitigation measures and permit conditions that result from these regulatory reviews and approvals.

Table 13: Anticipated Biological Resource Permits and Authorizations

Permit/Approval/Consultation	Agency	Purpose of Permit/Approval
Federal Agencies		
CWA Section 404 Nationwide or Individual Permit	USACE	Permanent fill and temporary impacts to waters of the U.S., including wetlands
FESA Section 7 Consultation/Biological Opinion	USFWS	Potential incidental take and habitat modification for coastal California gnatcatcher and least Bell's vireo
State Agencies		
Permit to Construct	CPUC	Overall project approval and CEQA review
CWA Section 401 Water Quality Certification	Los Angeles RWQCB	Impacts to waters of the State
CWA Section 402 NPDES General Construction Permit	Los Angeles RWQCB	Storm water discharges associated with construction activities disturbing more than 1 acre of land
Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality (Water Quality Order No. 2003-0003-DWQ)	Los Angeles RWQCB	Groundwater discharges associated with construction activities
California Fish and Game Code Section 1600 Lake or Streambed Alteration Agreement	CDFW	Construction within a stream or channel, including temporary impacts to streams, as well as potential impacts to riparian vegetation
2081 Incidental Take Permit	CDFW	Potential incidental take of least Bell's vireo

10 – REFERENCES

AMEC. 2007. *Biological Technical Report for the Southern California Edison Tehachapi Renewable Transmission Project (TRTP) Segments 6, 7, 8, and 11*. Volume I of II.

AMEC. 2009a. *Final 2009 Burrowing Owl Focused Survey Report for Segments 7 and 8 of the Southern California Edison Tehachapi Renewable Transmission Project*. October. Irvine, CA. Prepared for Southern California Edison, California.

AMEC. 2009b. *Final 2009 Burrowing Owl Focused Survey Report for Segments 6 and 11 of the Southern California Edison Tehachapi Renewable Transmission Project*. October. Irvine, CA. Prepared for Southern California Edison, California.

AMEC. 2009c. *Final Special-Status Plant Species Survey Report for the Southern California Edison Tehachapi Renewable Transmission Project Segments 7 and* 8. October. Irvine, CA. Prepared for Southern California Edison, California.

American Ornithologists' Union. 1998. *Checklist of North American Birds.* 7th ed. Washington, D.C.

APLIC. 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*. Online. http://www.dodpif.org/downloads/APLIC_2006_SuggestedPractices.pdf. Site visited October 3, 2014.

APLIC. 2012. *Reducing Avian Collisions with Power Lines: The State of Art in 2012*. Online. http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf. Site visited October 21, 2014.

Aspen. 2008. *Biological Specialist Report for the Tehachapi Renewable Transmission Project.* Online. ftp://ftp.cpuc.ca.gov/gopher-data/environ/tehachapi_renewables/TRTP_SpecialistReports/SpecialistReportsTOCL.htm. Site visited July, 2014.

Aspen. 2010. *Final Environmental Impact Statement, Southern California Edison's Application for the Tehachapi Renewable Transmission Project*. Prepare for the California Public Utilities Commission and the USDA Forest Service. October.

Atwood, J.L, and D.R. Bontrager. 2001. California Gnatcatcher (*Polioptila californica*). In Poole, A., and F. Gill (eds). The Birds of North America, No. 574. Philadelphia, Pennsylvania. The Birds of North America, Inc.

Atwood, J.L. 1990. Status Review of the California Gnatcatcher (*Polioptila californica*). Manomet Bird Observatory, Manomet, Massachusetts.

Atwood, J.L. and D.R. Bontrager. 1992. *Elevational Distribution of the California Gnatcatchers in the United States*. Journal of Field Ornithology 63 (2): 159-168.

Baldwin, B.G. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition.* Berkeley, California: University of California Press.

Calflora. 2014. Information on Wild California Plants for Conservation, Education, and Appreciation. Online. http://www.calflora.org. Site visited July 2014.

California Burrowing Owl Consortium 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*. Alviso, California.

CaliforniaHerps.com. California Reptiles and Amphibians. Online. http://www.californiaherps.com/lizards/pages/a.h.beldingi.html. Site visited July 2014.

CDFG. 1988. *A Guide to Wildlife Habitats of California*. Online. https://www.dfg.ca.gov/biogeodata/cwhr/wildlife_habitats.asp. Site visited July 2014.

CDFG. 1992. *Recovery Plan: Bank Swallow (Riparia riparia)*. December.

CDFG. 1994. *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California*. November.

CDFG. 1995. *Staff Report on Burrowing Owl Mitigation*. State of California.

CDFG. 2003. List of California Terrestrial Natural Communities Recognized by the CNDDB. September 2003 Edition. Online. http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf. Site visited July 2014.

CDFG. 2006. *Guidelines for Assessing the Effects of the Proposed Project on Rare, Threatened, and Endangered Plants and Natural Communities*. Sacramento, California.

CDFG. 2007. *California Swainson's Hawk Inventory: 2005-2006.* Online. http://www.dfg.ca.gov/rap/projects/swainsonhawk/. Site visited February 2015.

CDFG. 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California.* Online. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10413. Site visited December 2014.

CDFG. 2009. *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities*. California Natural Resources Agency. November 24

CDFG. 2011. Special Animals. California Natural Diversity Database. Biogeographic Data Branch. Natural Resources Agency, State of California. January.

CDFG. 2012. *Staff Report on Burrowing Owl Mitigation*. Natural Resources Agency, State of California.

CDFW. 2013. Natural Community Conservation Planning. Online. https://www.dfg.ca.gov/habcon/nccp/. Site visited July 2014.

CDFW. 2014a. California Fish and Game Code 1600-1616. Online. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=fgc&group=01001-02000&file=1600-1616. Site visited June 2014.

CDFW. 2014b. State and Federally Listed Endangered and Threatened Animals of California. CNDDB, Biogeographic Data Branch, Habitat Conservation Division. Sacramento, CA. Data accessed August 2013.

CDFW. 2014c. Wildlife and Habitat Data Analysis Branch, Habitat Conservation Division. CNDDB. RareFind Version 3.0.2. State and Federally Listed Endangered and Threatened Animals of California. Database.

City of Bell Gardens. 1995. *City of Bell Gardens General Plan*.

City of Commerce. 2008. *City of Commerce General Plan*. Online. http://www.ci.commerce.ca.us/DocumentCenter/Home/View/152. Site visited December 2014.

City of Montebello. 1973. *City of Montebello General Plan.* Online. http://www.cityofmontebello.com/depts/planning_n_community_development/planning_division/general_plan/default.asp. Site visited July 2014.

City of Montebello. 2014. Municipal Code. https://library.municode.com/index.aspx?clientId=16499. Site visited July 2014.

City of Monterey Park. 2001. *General Plan.* Online. http://www.montereypark.ca.gov/253/General-Plan. Site visited July 2014.

City of Monterey Park. 2014. Municipal Code. Online. http://qcode.us/codes/montereypark/. Site visited July 2014.

City of Pasadena. 2004. *Comprehensive General Plan.* Online. http://cityofpasadena.net/Planning/CommunityPlanning/General_Plan/. Site visited July 2014.

City of Pasadena. 2014. Municipal Code. Online. http://cityofpasadena.net/CityClerk/MunicipalCode/. Site visited July 2014.

City of Rosemead. 2010. *City of Rosemead General Plan Update*. Online. http://www.cityofrosemead.org/index.aspx?page=88. Accessed December 2014.

City of South El Monte. 2000. *City of South El Monte General Plan*. Online. http://www.ci.south-el-monte.ca.us/ABOUTUS/GeneralPlan.aspx. Accessed December 2014.

CNDDB. 2014. California Natural Heritage Division, California Department of Fish and Wildlife, Sacramento, CA. Online. http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp. Site visited July 2014.

CNPS. 2001. *CNPS Botanical Survey Guidelines*. California Native Plant Society. Sacramento, California. 3pp.

CNPS. 2002. *Some Preliminary Observations on the California Black Walnut (Juglans californica)*. Fremontia 30 (1). January.

CNPS. 2014. Inventory of Rare and Endangered Plants (online edition, version 8-02). Online. California Native Plant Society, Sacramento, CA. http://www.rareplants.cnps.org/. Website accessed in July 2014.

Comrack, L.A. and R.J. Logsdon. 2008. *Status Review of the American Peregrine Falcon (Falco peregrinus anatum) in California.* California Department of Fish and Game, Wildlife Branch, Nongame Wildlife Program Report 2008-06. 36 pp.

County of Los Angeles. 1980. *County of Los Angeles General Plan*. Online. http://planning.lacounty.gov/generalplan/existing. Accessed December 2014.

County of Los Angeles. 1980. *County of Los Angeles General Plan*. Conservation and Open Space Element. Online. http://planning.lacounty.gov/assets/upl/project/gp_web80-conservation-and-open-space.pdf. Site visited June 2014.

County of Los Angeles. 2014. *Draft General Plan 2035*. Conservation and Natural Resources Element. Online. http://planning.lacounty.gov/generalplan. Site visited July 2014.

County of Los Angeles. *Code of Ordinances Chapter 12.28 – Brush and Vegetation.* County of Los Angeles. Code of Ordinances Chapter 22.56 – Oak Tree Permits. CPUC. 2009. *SCE's Tehachapi Renewable Transmission Project Final Environmental Impact Report/Statement.* Online. ftp://ftp.cpuc.ca.gov/gopher-data/environ/tehachapi_renewables/TRTP_Final%20EIR-EIS/TOC.htm. Site visited June 2014.

CPUC. *SCE's Tehachapi Renewable Transmission Project Proponent's Environmental Assessment*. Online. ftp://ftp.cpuc.ca.gov/gopher-data/environ/tehachapi_renewables/PEA/_TOC_Volume_1.htm. Site visited June 2014.

Crother, B.I., ed. 2001. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding*. Society for the Study of Amphibians and Reptiles Herpetological Circular 29.

Crother, B.I., J. Boundy, J.A. Campbell, K. De Quieroz, D. Frost, D.M. Green, R. Highton, J.B. Iverson, R. W. McDiarmid, P.A. Meylan, T.W. Reeder, M.E. Seidel, J.W. Sites, Jr., S.G. Tilley, and D.B. Wake. 2003. *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico: Update*. Herpetological Review, 2003, 34(3), 196-203.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experimental Station, Vicksburg, MS. 117 pp.

EPA and USACE. 2008. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. U.S.* and *Carabell v. USACE*. December 2, 2008.

Estep, J.A. 1989. *Biology, Movements, and Habitat Relationships of the Swainson's Hawk in the Central Valley of California*, 1986-1987. California Department of Fish and Game, Nongame Bird and Mammal Section Report, 53 pp.

Hickman, J.C. 1993. *The Jepson Manual, Higher Plants of California.* Berkeley: University of California Press.

Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. CDFW. Unpublished report.

https://library.municode.com/HTML/16274/level4/TIT22PLZO_DIV1PLZO_CH22.56COUSPEVANOUSTEUSDIRE_PT16OATRPE.html#TIT22PLZO_DIV1PLZO_CH22.56COUSPEVANOUSTEUSDIRE_PT16OATRPE_22.56.2050ESUR. Site visited January 12, 2015.

ICF. 2010a. *Focused Survey Report for Burrowing Owl, Segments 6 and 11*. October. Irvine, CA. Prepared for Southern California Edison, California.

ICF. 2010b. *Focused Survey Report for Burrowing Owl, Segments 7 and 8*. October. Irvine, CA. Prepared for Southern California Edison, California.

ICF. 2010c. *Focused Survey Report for Special-Status Plant Species, Segments 7 and 8*. October. Irvine, CA. Prepared for Southern California Edison, California.

ICF. 2010d. *Focused Survey Report for Coastal California Gnatcatcher, Segments 7 and 8*. October. Irvine, CA. Prepared for Southern California Edison, California.

ICF. 2010e. *Jurisdictional Delineation Report for Segments 6 and 11 of the Tehachapi Renewable Transmission Project: Segment 6 and 11*.

ICF. 2010f. *Jurisdictional Delineation Report for Segments 7 and 8 of the Tehachapi Renewable Transmission Project: Segment 7 and 8*.

ICF. 2011a. *Focused Survey Report for Coastal California Gnatcatcher, Segments 7 and 8*. October. Irvine, CA. Prepared for Southern California Edison, California.

ICF. 2011b. *Preconstruction Biological Survey and Clearance Sweep Report for Southern California Edison's WP3 Transmission Line Work Segment 7 Transmission Line (M40-T1, M42-T6, WSS 7-7.62, WSS 7-7.63, WSS 7-7.64, WSS 7-7.75), and 66kV Relocation (4774404E to 4774410E, M7-T1) Los Angeles County, California.* September.

ICF. 2011c. *Tehachapi Renewable Transmission Project Segment 11A Goodrich to Mesa Transmission Line Jurisdictional Delineation and Impact Analysis Report*.

ICF. 2011d. *Tree Inventory Report, Segments 7 and 8*. October. Irvine, CA. Prepared for Southern California Edison, California.

Jennings, M.R., and M.P. Hayes. 1994. *Amphibian and Reptile Species of Special Concern in California.* CDFW, Sacramento.

Jepson eFlora. 2014. Taxonomic treatments for California native and naturalized plants. Online. http://ucjeps.berkeley.edu/IJM.html. Website accessed in July 2014.

Lowther, P.E., Celada, C., Klein, N.K., Rimmer, C.C., and Spector, D.A. 1999. Yellow Warbler (*Dendroica petechia*). In Poole, A., and F. Gill (eds). The Birds of North America, No. 454. Philadelphia, Pennsylvania. The Birds of North America, Inc.

Munz, P.A. 1974. *A Flora of Southern California*. University of California Press, Berkeley. 517 pp.

NOAA National Climatic Data Center. 2014. Online. http://www.ncdc.noaa.gov/cdo-web/datatools/normals. Site visited July 2014.

NWS. 2007. Online. http://www.nws.noaa.gov/. Site visited July 2014. Online. https://library.municode.com/HTML/16274/level2/TIT12ENPR_CH12.28BRVE.html. Site visited January 12, 2015.

Petit, D.R., Petit, K.E., and Petit, L.J. 1990. *Geographic Variation in Foraging Ecology of North American Insectivorous Birds*. Studies in Avian Biology 13: 254-263.

Schlorff, R.W. and P.H. Bloom. 1983. *Importance of Riparian Systems to Nesting Swainson's Hawks in the Central Valley of California*. Pp 612-618. In: R.E. Warner and K.M. Hendrix, (Eds.). 1984. California Riparian Systems. University of California Press, Berkeley.

Shurford, W.S., and Gardali, T., editors. 2008. California Birds Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Sibley, D. A. 2004. *The Sibley Field Guide to Birds of Western North America*. First edition. New York, NY: Andrew Stewart Publishing, Inc.

SWRCB. 2014. Laws and Regulations. Online. http://www.swrcb.ca.gov/laws_regulations/. Site visited June 2014.

U.S. Forest Service/USACE. 2009. *Biological Assessment for the Tehachapi Renewable Transmission Project*. December.

USACE. 1986. Regulatory Program Regulations. 33 CFR Part 328: Definition of Waters of the United States. Online. http://www.gpo.gov/fdsys/pkg/CFR-2011-title33-vol3/pdf/CFR-2011-title33-vol3-part328.pdf. Site visited June 2014.

USACE. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0). Ed. J. S. Wakely, R. W. Lichvar, and C. V. Noble. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USFWS. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. Sacramento, California. 2pp.

USFWS. 1997. *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines*. Carlsbad, CA: USFWS. Unpublished report, dated 28 July 1997.

USFWS. 2010a. *Coastal California Gnatcatcher (Polioptila californica californica) 5-year Review: Summary and Evaluation.*

USFWS. 2010b. *Formal Section 7 Consultation on the Tehachapi Renewable Transmission Proejct, Angeles National Forest, California (Biological Opinion FWS-10B0117-10F0215*). July.

USFWS. 2011. The Information, Planning, and Consultation System (IPAC System). Online. http://www.fws.gov/ipac/. Site visited July 2014.

USFWS. 2013. Conservation Plans and Agreements Database. Online. http://ecos.fws.gov/conserv_plans/public.jsp. Site visited July 2014.

USFWS. 2014a. Critical Habitat Mapper. Online. http://criticalhabitat.fws.gov/. Site visited July 2014.

USFWS. 2014b. National Wetlands Inventory, Wetlands Mapper. Online. http://www.fws.gov/wetlands/Data/Mapper.html. Site visited June 2014.

ATTACHMENT A: REPRESENTATIVE PHOTOGRAPHS

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ATTACHMENT A: REPRESENTATIVE PHOTOGRAPHS

Photograph 1:
Nevin's Barberry (*Berberis nevinii*), a federal- and state-listed endangered species, at the Whittier- Narrows Nature Center in the San Gabriel River corridor.

Photograph 2:
Representative photograph of California annual grassland habitat at the Mesa Substation site.

Photograph 3: Representative photograph of California walnut woodland in the San Gabriel River corridor.

Photograph 4: Representative photograph of coastal sage scrub south of the Montebello Hills area.

Photograph 5: Representative photograph of disturbed coast live oak woodland habitat at the Goodrich Substation site.

Photograph 6: Representative photograph of ruderal grassland and disturbed/developed habitat at the Mesa Substation site.

Photograph 7:
Representative photograph of exotic giant reed at Rio Hondo.

Photograph 8:
Representative photograph of mulefat scrub habitat at the Mesa Substation site.

Photograph 9: Representative photograph of non-native woodland at the Mesa Substation site.

Photograph 10: Representative photograph of disturbed riparian habitat at the Mesa Substation site.

Photograph 11: Representative photograph of southern sycamore-alder riparian woodland in the San Gabriel River corridor.

Photograph 12: Representative photograph of ruderal habitat at the Mesa Substation site.

Photograph 13: Representative photograph of an ephemeral drainage at the Mesa Substation site.

Photograph 14: Representative photograph of intermittent drainage, Rio Hondo.

Photograph 15:
Representative photograph of disturbed/developed habitat at the Goodrich Substation site.

ATTACHMENT B: PLANT SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

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ATTACHMENT B: PLANT SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

Gymnosperms

Cupressaceae - Cypress Family

Hesperocyparis sp.	Cypress
Juniperus californica	California juniper

Pinaceae - Pine Family

Pinus radiata	Monterey pine

Angiosperms - Dicots

Adoxaceae - Muskroot Family

Sambucus nigra subsp. *caerulea*	Blue elderberry

Aizoaceae - Fig-Marigold Family

**Carpobrotus chilensis*	Sea fig

Anacardiaceae - Cashew or Sumac Family

Malosma laurina	Laurel sumac
Rhus ovata	Sugar bush
**Schinus molle*	Peruvian pepper tree
**Schinus terebinthifolius*	Brazilian pepper tree
Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Conium maculatum*	Poison hemlock
**Foeniculum vulgare*	Sweet fennel

Apocynaceae - Dogbane/Milkweed Family

Asclepias sp.	Milkweed
**Nerium oleander*	Oleander

Araliaceae - Ginseng Family

**Hedera helix*	English ivy

Asteraceae (Compositae) - Sunflower Family

**Ambrosia artemisiifolia*	Common ragweed
Artemisia californica	California sagebrush
Artemisia douglasiana	California mugwort
Baccharis pilularis subsp. *consanguinea*	Coyote brush
Baccharis salicifolia subsp. *salicifolia*	Mule fat
**Carduus pycnocephalus* subsp. *pycnocephalus*	Italian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
Helianthus annuus	Common sunflower
**Helminthotheca echioides*	Bristly ox-tongue
Heterotheca grandiflora	Telegraph weed
**Lactuca serriola*	Prickly lettuce
**Silybum marianum*	Milk thistle

Berberidaceae - Barberry Family

Berberis nevinii	Nevin's barberry

Betulaceae - Birch Family

Alnus rhombifolia	White alder

Brassicaceae (Cruciferae) - Mustard Family

**Brassica nigra*	Black mustard
**Hirschfeldia incana*	Short-podded mustard
**Lepidium latifolium*	Broadleaf pepperweed
**Raphanus sativus*	Wild radish
Cactaceae - Cactus Family	
**Opuntia ficus-indica*	Indian-fig
Chenopodiaceae - Goosefoot Family	
**Chenopodium* sp.	Goosefoot
**Salsola tragus*	Russian-thistle
Convolvulaceae - Morning-Glory Family	
Calystegia macrostegia	Morning-glory
**Convolvulus arvensis*	Bindweed
Cuscuta sp.	Dodder
Crassulaceae - Stonecrop Family	
**Crassula ovata*	Jade plant
Cucurbitaceae - Gourd Family	
Cucurbita foetidissima	Calabazilla
Euphorbiaceae - Spurge Family	
Croton setigerus	Turkey mullein
Euphorbia crenulata	Chinese caps
**Ricinus communis*	Castor bean
Fabaceae (Leguminosae) - Legume Family	
**Acacia* sp.	Acacia
Acmispon brachycarpus	Woolly trefoil
**Albizia julibrissin*	Silk tree
**Melilotus albus*	White sweetcover
**Senna* sp.	Senna
Fagaceae - Oak Family	
Quercus agrifolia var. *agrifolia*	Coast live oak
Geraniaceae - Geranium Family	
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
Grossulariaceae - Gooseberry Family	
Ribes aureum var. *gracillimum*	Golden currant
Hamamelidaceae - Witch Hazel Family	
**Liquidambar styraciflua*	Liquidambar
Juglandaceae - Walnut Family	
Juglans californica	Southern California black walnut
**Juglans regia*	English walnut
Lamiaceae (Labiatae) - Mint Family	
**Rosmarinus officinalis*	Rosemary
Salvia apiana	White sage
Salvia mellifera	Black sage
Lauraceae - Laurel Family	
Umbellularia californica	California bay
Lythraceae - Loosestrife Family	
**Lagerstroemia indica*	Crape-myrtle

Malvaceae - Mallow Family	
**Malva parviflora*	Cheeseweed
Moraceae - Mulberry Family	
**Ficus carica*	Common fig
Myrtaceae - Myrtle Family	
**Callistemon citrinus*	Crimson bottlebrush
**Eucalyptus globulus*	Blue gum
**Eucalyptus pulverulenta*	Silver-leaved gum
**Eucalyptus tereticornis*	Forest red gum
**Eucalyptus viminalis*	Manna gum
Oleaceae - Olive Family	
**Fraxinus* sp.	Ash
**Olea europaea*	Olive
Onagraceae - Evening Primrose Family	
Epilobium ciliatum	Hairy willow-herb
Papaveraceae - Poppy Family	
Eschscholzia caespitosa	Tufted poppy
Passifloraceae - Passion Flower Family	
**Passiflora caerulea*	Blue passion flower
Plantaginaceae - Plantain Family	
**Plantago lanceolata*	English plantain
Platanaceae - Plane Tree Family	
Platanus racemosa	Western sycamore
Plumbaginaceae - Leadwort Family	
**Limonium sinuatum*	Wavy-leaf sea-lavender
Polygonaceae - Buckwheat Family	
Eriogonum fasciculatum	California buckwheat
**Rumex crispus*	Curly dock
Rhamnaceae - Buckthorn Family	
Frangula californica subsp. californica	California coffeeberry
Rosaceae - Rose Family	
Heteromeles arbutifolia	Toyon
Prunus ilicifolia subsp. *ilicifolia*	Holly-leafed cherry
**Pyracantha* sp.	Pyracantha
Salicaceae - Willow Family	
Salix gooddingii	Goodding's black willow
Salix lasiolepis	Arroyo willow
Sapindaceae - Soapberry Family	
Acer macrophyllum	Big-leaf maple
Acer negundo	California box elder
Scrophulariaceae - Figwort Family	
**Verbascum thapsus*	Woolly mullein
Simaroubaceae - Quassia Family	
**Ailanthus altissima*	Tree of heaven
Solanaceae - Nightshade Family	
Datura wrightii	Thornapple
**Nicotiana glauca*	Tree tobacco
**Physalis philadelphica*	Tomatillo

Tamaricaceae - Tamarisk Family

**Tamarix ramosissima*	Saltcedar

Ulmaceae - Elm Family

**Ulmus parvifolia*	Chinese elm

Urticaceae - Nettle Family

**Urtica urens*	Dwarf nettle

Verbenaceae - Vervain Family

Verbena sp.	Verbena

Vitaceae - Grape Family

Vitis girdiana	Desert wild grape

Angiosperms -Monocots

Agavaceae - Agave Family

Hesperoyucca whipplei	Our Lord's candle

Arecaceae (Palmae) - Palm Family

**Phoenix dactylifera*	Date palm
**Washingtonia robusta*	Mexican fan palm

Asphodelaceae - Asphodel Family

**Aloe* sp.	Aloe

Cyperaceae - Sedge Family

Cyperus eragrostis	Tall flatsedge

Poaceae (Gramineae) - Grass Family

**Arundo donax*	Giant reed
**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Bromus madritensis* subsp. *rubens*	Red brome
**Bromus tectorum*	Cheat grass
**Cortaderia selloana*	Selloa pampas grass
**Cynodon dactylon*	Bermudagrass
**Ehrharta erecta*	Panic veldt grass
**Festuca perennis*	Italian ryegrass
**Hordeum murinum*	Foxtail barley
**Pennisetum ciliare*	Buffel grass
**Pennisetum setaceum*	Crimson fountain grass
**Polypogon monspeliensis*	Rabbit's-foot grass

Typhaceae - Cattail Family

Typha latifolia	Broad-leaved cattail

ATTACHMENT C: WILDLIFE SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

ATTACHMENT C: WILDLIFE SPECIES OBSERVED BY INSIGNIA IN JUNE AND DECEMBER 2014

Invertebrates	
Red swamp crawfish	*Procambarus clarkii*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Orange-throated whiptail	*Aspidoscelis hyperythrus*
Birds	
Great blue heron	*Ardea herodias*
Snowy egret	*Egretta thula*
Turkey vulture	*Cathartes aura*
Canada goose	*Branta canadensis*
Cooper's hawk	*Accipiter cooperii*
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
American peregrine falcon	*Falco peregrinus anatum*
American coot	*Fulica americana*
Rock dove	*Columba livia*
Mourning dove	*Zenaida macroura*
Greater roadrunner	*Geococcyx californianus*
Black-chinned hummingbird	*Archilochus alexandri*
Anna's hummingbird	*Calypte anna*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Say's phoebe	*Sayornis saya*
Western kingbird	*Tyrannus verticalis*
Loggerhead shrike	*Lanius ludovicianus*
Least Bell's vireo	*Vireo bellii pusillus*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Bushtit	*Psaltriparus minimus*
Bewick's wren	*Thryomanes bewickii*
coastal California gnatcatcher	*Polioptila californica californica*
Western bluebird	*Sialia mexicana*
Northern mockingbird	*Mimus polyglottos*
European starling	*Sturnus vulgaris*
Yellow warbler	*Dendroica petechia*
Yellow-rumped warbler	*Dendroica coronata*
California towhee	*Pipilo crissalis*
Song sparrow	*Melospiza melodia*
White-crowned sparrow	*Zonotrichia leucophrys*
House finch	*Carpodacus mexicanus*

Mammals	
Audubon's cottontail	*Sylvilagus audubonii*
California ground squirrel	*Spermophilus beecheyi*
Eastern fox squirrel	*Sciurus niger*
Botta's pocket gopher	*Thomomys bottae*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*

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