SOUTHERN CALIFORNIA EDISON DOCUMENTATION FOR COMPLIANCE WITH THE OPINION GRANTING A PERMIT TO CONSTRUCT (PTC)

NOTICE TO PROCEED REQUEST–1 FOR INITIAL PROJECT-RELATED ACTIVITIES FOR THE MESA 500-KV SUBSTATION PROJECT - REVISION 1[1]

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~~September~~ October 2017

[1] October 2017: The first revision to this document occurred in October 2017.

ICF. 2017. Southern California Edison Documentation for Compliance with the Opinion Granting a Permit to Construct (PTC) Notice to Proceed Request-1 for Initial Project-Related Activities for the Mesa 500-kV Substation Project. ~~September~~October[2]. (ICF 17.17.) San Diego, CA. Prepared for Southern California Edison, Irwindale, CA.

[2] October 2017: The first revision to this document occurred in October 2017.

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[3] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed. Figure 7 has been updated for Revision 1 to reflect the increase from 12 to 16 temporary wood poles.

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Acronyms

APE	Area of Potential Effect
APMs	Applicant Proposed Measures
BMPs	best management practices
CDFW	California Department of Fish and Wildlife
CPUC	California Public Utilities Commission
CY	cubic yards
DEIR	Draft Environmental Impact Report
FEIR	Final Environmental Impact Report
HPMP	Historic Properties Management Plan
HRMP	Habitat Revegetation and Mitigation Plan
kV	kilovolt
LST	lattice steel tower
MBTA	Migratory Bird Treaty Act
MEER	Mechanical Electrical Equipment Room
MMs	Mitigation Measures
MWD	Metropolitan Water District
NTPR-1	Notice to Proceed Request
O&M	operations and management
OPGW	optical ground wire
PA	Programmatic Agreement
PEA	Proponent's Environmental Assessment
PRMP	Paleontological Resources Management Plan
Project	Mesa 500-kV Substation Project
PTC	Permit to Construct
PVC	polyvinyl chloride
RCP	Reinforced Concrete Pipe
ROW	right-of-way
SCE	Southern California Edison
SWPPP	Storm Water Pollution Prevention Plan
TRTP	Tehachapi Renewable Transmission Project
TSP	tubular steel pole
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WEAP	Worker Environmental Awareness Plan

1.0 Introduction

This Notice to Proceed Request (NTPR-1) includes the removal, relocation, modification, and/or construction of various transmission, subtransmission, distribution, and telecommunication facilities, including the relocation of an existing 72-inch Metropolitan Water District (MWD) pipeline that traverses the substation property, within and adjacent to Mesa Substation. The substation is located in the City of Monterey Park, in Los Angeles County, California. See Section 11, Figure 1: Project Location Map.

On March 13, 2015, Southern California Edison (SCE) filed an application (A.15-4 03-003) and Proponent's Environmental Assessment (PEA) with the California Public Utilities Commission (CPUC) for a Permit to Construct (PTC) the Mesa 500-kilovolt (kV) Substation Project (Project). The CPUC issued a Draft Environmental Impact Report (DEIR) in April 2016 and a Final Environmental Impact Report (FEIR) in October 2016, which describes the Mesa 500-kV Substation Project.

All Applicant Proposed Measures (APMs), Mitigation Measures (MMs), and permits conditions have been identified, and will be implemented or completed prior to commencement of the construction associated with this NTPR. Monitoring and reporting on implementation of APMs and MMs will be conducted in accordance with the Mesa 500-kV Substation Project Mitigation, Monitoring, Compliance, and Reporting Plan (Appendix A). Additionally, required preconstruction surveys for biological resources will be conducted prior to the start of construction, as applicable.

2.0 Project Components

2.1 Modifications to Existing Mesa Substation and Existing Roads

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with the modifications to the existing Mesa Substation and existing access roads north of Potrero Grande and south of Via Campo. Substation site preparation activities will include vegetation removal and temporary fencing around the existing substation (described in Section 2.2.2). Staging areas for construction activities will be co-located with the areas used for substation and transmission work. Work on the substation involves modifications to the existing switchrack apparatus. New polyvinyl chloride (PVC) duct banks will be installed to connect the existing operating theater telecommunication room with the new Mechanical Electrical Equipment Room (MEER). Work on modifications to the existing Mesa Substation is described in the FEIR, Volume I, Section 2.2.1.1, Proposed Mesa Substation. See Section 11, Figure 2: Mesa Substation and Associated Routes.

2.2 Substation Support Components

2.2.1 Staging Yards

Three staging yards covered under NTPR-1 will be used for substation construction, and construction of transmission, subtransmission, distribution, and telecommunications features (see

Section 11, Figure 4~~4~~). Staging yards would be used as reporting locations for workers, vehicle and equipment parking, and material storage. These areas may also have construction trailers for supervisory and clerical personnel and could be lit for staging and security purposes. In addition, normal maintenance and refueling of construction equipment would also be conducted at staging yards. All refueling and storage of fuels would be performed in accordance with the StormWater Pollution Prevention Plan (SWPPP). Vegetation will be trimmed at the staging yards, but will not be removed.

The first staging yard, located northwest of the intersection of Potrero Grande Drive and Saturn Drive, will be approximately 4.95 acres. The second staging yard, located southwest of the intersection of Via Campo and North Vail Avenue, will be approximately 3.80 acres. The third staging yard, located southeast of the intersection of Potrero Grande Drive and Greenwood Avenue, will be approximately 23.90 acres.

2.2.2 Substation Grading

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with the grading of Mesa Substation. Grading will involve vegetation removal, installation of construction roads and construction trailers, and land disturbance for construction staging. Staging yards for substation grading will be shared with other construction elements (described in Section 2.2.1). In addition, approximately 2,300 linear feet of new permanent access roads, 2,170 linear feet north of Potrero Grande and 130 feet south of SR-60 and adjacent to existing access roads, will be constructed in accordance with current SCE practices for construction and operations and management (O&M). Grading activities for the Mesa Substation are described in the FEIR, Volume I, Section 2.3.2.1, Site Preparation. See Section 11, Figure 3: Grading, Access Roads, and Drainages and Section 11, Figure 4: Staging Yard and Vegetation Removal~~5~~.

2.2.3 Mesa Substation Temporary Fencing

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with installation of temporary chain-link fencing around the future Mesa Substation site, and constructing a new driveway to provide access to the construction equipment and vehicles. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. Work on the temporary fencing around the future Mesa Substation is described in the FEIR, Volume I, Section 2.3.2.2, Construction Phases.

2.2.4 Retaining Walls

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with installation of three permanent retaining walls combined with three perimeter walls (see Section 11, Figure 3) within the Mesa Substation site. One substation retaining wall will be located on the north side of the substation along Potrero Grande Drive and will be approximately 1,550 feet long with a maximum height of approximately 18 feet. A 10-foot-tall substation perimeter wall will be mounted to the top of this substation retaining wall. The second substation retaining wall will be on the northeast side

~~4~~ October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed.

~~5~~ October 2017: The footprint for the vegetation removal described in this section is revised on Figure 4, Sheet 1. The description of this project component does not require revision.

of the substation at the corner of Potrero Grande Drive and Greenwood Avenue and will be approximately 475 feet long. The first 208 foot stretch of this wall along Potrero Grande Drive will feature a maximum height of 10 feet with no fence or wall mounted to the top of the retaining wall. The second 267 foot stretch of this wall along Greenwood Avenue will feature a maximum height of 19 feet with a 10 foot perimeter wall mounted to the top of the retaining wall. A third retaining will be installed along the southern perimeter of the project. The first 816 foot stretch of this wall will feature a maximum height of 8 feet with an 8 foot BetaFence (wrought iron) fence mounted to the top of the retaining wall. This stretch of the wall has a 34 foot gate to accommodate MWD access to an existing manhole. The second 708 foot stretch of this wall will feature a maximum height of 8 feet with a 10 foot perimeter wall mounted to the top of the retaining wall. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. Work on the temporary fencing around the future Mesa Substation is described in the FEIR, Volume I, Section 2.3.2.2, Construction Phases, Retaining Walls subsection.

2.2.5 Mechanical Electrical Equipment Room

The proposed Mesa Substation would include two MEERs: one MEER connected to the proposed 500-, 220-, and 66-kV switchracks ("senior MEER"), and another connected to the proposed 16-kV switchrack ("junior MEER"). Under NTPR-1, SCE or its contractor(s) will engage in activities associated with construction of the basement for the senior MEER of the future Mesa Substation. This room will be constructed from a pre-engineered metal building. This structure will connect to the proposed switchracks through underground cable trenches and/or conduit banks. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. Work on the temporary fencing around the future Mesa Substation is described in the FEIR, Volume I, Section 2.2.1.1 Proposed Mesa Substation, Mechanical and Electrical Equipment Room subsection.

2.2.6 Storm Drain

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with the storm drain component at the future Mesa Substation. This component includes installation of 21 manholes (not shown on Figures), v-ditches totaling approximately 6,007 linear feet, 33 inlets, 2 headwalls/wingwalls, a detention basin (approximately 387 feet by 396 feet, 2.67 acres), and approximately 4,900 lineal feet of storm drain pipe (in various diameters from 18 to 72 inches). For a depiction of the v-ditches, see the proposed drainages shown in Section 11, Figure 3. The detention basin will be constructed in the southwest corner of the proposed Mesa Substation site and the Project will implement site and source control best management practices (BMPs) into the design to help mitigate surface runoff. Drainage systems (storm drain pipe) would be constructed along the perimeter of the substation to direct interior runoff to the detention basin. Staging areas for storm drain activities will be co-located with the areas used for substation and transmission work. Work on the storm drain at the future Mesa Substation is described in the FEIR, Volume I, Section 2.3.2.1, Site Preparation.

2.2.7 Metropolitan Water District Waterline Relocation

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with the MWD waterline relocation. MWD waterline relocation activities will include the removal of approximately 2,700 feet of an MWD 72-inch-diameter waterline that currently runs through the middle of the Mesa Substation property and replacement with an approximately 3,200-foot-long, 84-inch-diameter line,

relocated to the west of its original configuration. The existing waterline will remain in service until the proposed line is ready to be connected, at which time the MWD will utilize alternate sources to maintain water service. Other activities include the use of staging yards as described in Section 2.2.1, vegetation removal north of Potrero Grande Road (0.82 acre) and within the area described in Section 2.2.2 (see Section 11, Figure 4[6]), and installation of new permanent roads as described in Section 2.2.2. Staging areas for waterline relocation activities will be co-located with the areas used for substation and transmission work. The MWD waterline relocation is discussed in the FEIR, Volume I, Section 2.2.1.2, Metropolitan Water District. See Section 11, Figure 5: MWD Waterline Relocation and Groundwater Monitoring Well Removal.

2.2.8 Groundwater Monitoring Well Decommissioning

Under NTPR-1, SCE or its contractor(s) will engage in activities associated with decommissioning of groundwater monitoring wells at the Mesa Substation (see Section 11, Figure 5). Specifically, the 11 existing ground water monitoring wells will be decommissioned over a period of 5 to 10 business days following the general requirements established in the California Department of Water Resources Bulletin 74-90, California Well Standards (DWR 1991). Well OI74A, which is labeled "removed/replaced" on Figure 5, will not be replaced as part of this project. The Environmental Protection Agency, at its own discretion, may require that this well be replaced after this project is completed. Activities associated with well decommissioning include the use of staging yards as described in Sections 2.2.1, vegetation removal and installation of new permanent access roads as described in Section 2.2.2, and installation of equipment pads associated with well equipment removals. Well decommissioning will occur as outlined in the approved Well Management Plan. Well decommissioning will include well design verification, equipment removal, sealing, and overdrilling. The sealing material will consist of a mix of Type I or Type II Portland cement, powdered sodium bentonite, and water. Staging areas for groundwater monitoring well decommissioning activities will be co-located with the areas used for substation and transmission work. The groundwater monitoring well decommissioning is discussed in the FEIR, Volume I, Section 2.3.2.1, Site Preparation.

2.3 Transmission Line Relocations

Planned construction activities for transmission associated with NTPR-1 are summarized below, and described in the FEIR, Volume I, Section 2.2.1.3, Transmission Line Features. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. See Section 11, Figure 6: Transmission Line Relocations.

- Replace 20 existing 220-kV lattice steel tower (LST) structures with 10 new LST structures and 2 new tubular steel pole (TSP) structures within the substation property and in the transmission right-of-way (ROW) areas adjacent to Mesa Substation. Structure removal will include existing conductor and foundations to various depths.
- Install two temporary steel poles and three spans of temporary conductor to re-route the Mesa-Vincent No.1 220-kV line to switchrack position 2.
- Install two temporary steel poles and five spans of temporary conductor to re-route the Lighthipe-Mesa 220-kV line around the southern portion of the existing substation.

[6] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed.

- Install one temporary steel pole and two spans of temporary conductor to re-route the Laguna Bell-Rio Hondo 220-kV line around the southern portion of the existing substation.
- Install four spans (two spans each) of temporary conductors on new permanent LST structures to re-route the Goodrich-Laguna Bell and Mesa-Vincent #2 220-kV lines around the northern portion of the future substation area.
- Install one temporary steel pole and two spans of temporary conductor to drop the Eagle Rock-Mesa 220-kV line into Goodrich substation
- Conduct grading and other site preparation activities, including installation of new permanent access roads (see Section 11, Figure 3), and crane pads associated with tower assembly and erection.

2.4 Subtransmission Line Relocations

Planned construction activities for subtransmission line relocations associated with NTPR-1 are summarized below, and described in the FEIR, Volume I, Section 2.2.1.4, 66-kV Subtransmission Line Features. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. See Section 11, Figure 7: Subtransmission Line Relocations[7].

- Replace 15 existing 66-kV LSTs with four new TSP structures and one light weight steel pole within the substation property and in the transmission ROW areas adjacent to Mesa Substation. Structure removal will include existing conductor and foundations to various depths.
- Install ~~12~~ 16[8] temporary wood poles and nine double-circuit spans of conductor to re-route the Mesa-Walnut-Hillgen-Industry-Mesa-Reno and Mesa-Laguna Bell-Narrows 66-kV lines.
- Conduct vegetation removal and other site preparation activities, including land disturbance for construction work sites, and crane pads associated with structure assembly and erection in the area south of SR-60 as depicted in Section 11, Figure 4 and 7[9]. Approximately 0.95 acre of vegetation will be removed.

2.5 Telecommunications Line Relocations

Planned construction activities for telecommunications line relocations associated with NTPR-1, parts of Telecommunications Routes 1 and 2, are summarized below, and described in the FEIR, Volume, I, Section 2.2.2, Telecommunications Routes. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. See Section 11, Figure 8: Telecommunication Line Relocations.

- Remove existing skywrap fiber optic cabling wrapped around the overhead ground wire strung between two existing 220-kV LSTs (M17-T1 and M17-T2) on the north side of Potrero Grande

[7] October 2017: Figure 7 has been updated for Revision 1 to reflect the increase from 12 to 16 temporary wood poles.

[8] October 2017: The project will now use 16 temporary wood poles, changed from the previously approved 12 temporary wood poles, to re-route the Mesa-Walnut-Hillgen-Industry-Mesa-Reno and Mesa-Laguna Bell-Narrows 66-kV lines.

[9] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed. Figure 7 has been updated for Revision 1 to reflect the increase from 12 to 16 temporary wood poles.

Drive and reattach cable to one of the legs of M17-T1 and connect to a new splice box installed approximately 25 feet above ground (see Section 11, Figure 8). Connect splice box to a new underground conduit to be installed south towards Potrero Grande Drive. A splice box, not to be confused with a pull box, is a 3'x3' enclosure mounted on the body of a tower approximately 25' above ground.

- Re-route optical ground wire (OPGW) from splice box on existing 500-kV structure M118-T6 through new riser and underground conduit to connect to existing conduit.
- Combined, for both re-routes, install three manholes, approximately 1,100 feet of new conduit and approximately 4,800 feet of underground fiber cable (see Section 11, Figure 8: Telecommunication Line Relocations).
- Conduct vegetation removal and other site preparation activities, including installation of new permanent access roads, and crane pads associated with structure assembly and erection as depicted in Section 11, Figures 4 and 8. This vegetation removal is included with new substation vegetation removal as described in Sections 2.2.2 and 2.9.2.2.

2.6 Distribution Line Relocations

Planned construction activities for distribution associated with NTPR-1 are summarized below and are described in the FEIR, Volume I, Section 2.2.1.5, 16-kV Distribution Features. Staging areas for construction activities will be co-located with the areas used for substation and transmission work. See Section 11, Figure 9: Distribution Line Relocations.

- Remove eight existing 16-kV wood poles within the substation property and replace one 16-kV wood pole on the south side of Highway 60, directly across from Mesa Substation, with a new 16-kV TSP. Structure removal will include existing conductor.
- Install approximately 2,250 feet of new underground cable in existing conduits through five existing vaults or manholes along Potrero Grande, Markland, and Vail, including installation of a new pad-mounted switch near the intersection of Vail and Appian Way.
- Replace approximately 200 feet of underground conductor from an existing manhole to an existing pole at the east end of Appian Way.
- Replace two existing street light poles and associated overhead conductors with new concrete street lights fed by underground conductors installed in approximately 500 feet of new 3-inch conduit along the north side of Loveland Street, just west of Toler Avenue in the city of Bell Gardens.
- Conduct vegetation removal and other site preparation activities, including installation of new permanent access roads, land disturbance for construction staging areas, and crane pads associated with structure assembly and erection as depicted in Section 11, Figures 4 and 9. This vegetation removal is included with new substation vegetation removal as described in Sections 2.2.2 and 2.9.2.2.

2.7 Activities Associated with NTPR-1 Components

The specific activities that would occur at each component of NTPR-1 are presented in Table 1.

Table 2.1. NTPR-1 Components

Project Component (NTPR section number)	Approval Device	Project Sub-area	Project Activities to be Conducted
Modifications to Existing Mesa Substation (2.1)	FEIR	Substation	• Soil/Concrete/Steel/Equipment disposal • Installation of fencing, including temporary construction fencing and permanent ROW fencing • Installation of vaults, duct banks, foundations, tower structures, rack structures, underground cables, and overhead wires • Grading for site preparation • Installation and maintenance of BMPs • Operation of construction equipment and vehicles • Replacement of existing utility facilities
Staging Yards (2.2.1)			• Vegetation trimming • Grading for leveling of yard • Installation of temporary perimeter fencing • Application of gravel or crushed rock • Installation of temporary power supply
Substation Grading (2.2.2)	FEIR	Substation	• Vegetation removal, including grubbing and scraping • Mass grading for site preparation • Installation and maintenance of BMPs • Operation of construction equipment and vehicles • Soil import
Mesa Substation Temporary Fencing (2.2.3)	FEIR	Substation	• Installation of fencing, including temporary construction fencing and permanent ROW fencing
Retaining Walls (2.2.4)	FEIR	Substation	• Vegetation removal, including grubbing and scraping • Grading for preparation of vertical shoring • Installation and maintenance of vertical shoring for wall construction • Operation of construction equipment and vehicles • Installation of rebar reinforcement and pour concrete footing and wall sections
Mechanical Electrical Equipment Room (2.2.5)	FEIR	Substation	• Construction of an 11-foot tall underground reinforced concrete basement and erection of an above ground pre-engineered metal MEER
Storm Drain Installation (2.2.6)	FEIR	Substation	• Installation of new storm drain lines, including manholes, open trench excavation, and grading
Metropolitan Water District Waterline Relocation (2.2.7)	FEIR	Substation	• Installation of fencing, including temporary construction fencing and permanent ROW fencing • Construction of waterline, including site demolition activities, grading, installation of manholes and structures, engineered shoring, jack & bore operations under Potrero Grande, and open trench excavation

Project Component (NTPR section number)	Approval Device	Project Sub-area	Project Activities to be Conducted
Groundwater Monitoring Well Decommissioning (2.2.8)	FEIR	Substation	• Drilling of the original well borehole to a depth of 10 feet below ground surface • Plugging the borehole with cement/bentonite
Transmission Line Relocations (2.3) Subtransmission Line Relocations (2.4) Telecommunications Line Relocations (2.5) Distribution Line Relocations (2.6)	FEIR	Linear	• Vegetation removal, including grubbing and scraping • Concrete/Steel/Wood Pole/Conductor/Hardware disposal • Grading for site preparation • Installation of vaults/manholes, duct banks, foundations, tower or pole structures, underground cables, and overhead wires • Installation and maintenance of BMPs • Operation of construction equipment and vehicles • Temporary traffic control

2.8 Consistency with the FEIR

The Project Components and activities included under NTPR-1 are addressed in the FEIR. Specifically, components are discussed in the following FEIR volumes and sections.

- Mesa Substation: FEIR, Volume I, Section 2.2.1.1, Proposed Mesa Substation.
- Substation Grading: FEIR, Volume I, Section 2.3.2.1, Site Preparation.
- Mesa Substation Temporary Fencing: FEIR, Volume I, Section 2.3.2.2, Construction Phases.
- Retaining Walls: FEIR, Volume I, Section 2.3.2.2, Construction Phases.
- Mechanical Electrical Equipment Room: FEIR, Volume I, Section 2.2.1.1, Proposed Mesa Substation. A change to the description found in the FEIR will be that an 11-foot-high below-grade basement will be constructed for the senior MEER. The basement walls will be framed up and poured-in-place using concrete and reinforcements as well. The ground floor and associated structural steel will be installed and poured with lightweight concrete. Large concrete boom pumps will be used with concrete from mixer trucks for the placement of the concrete. Cranes, scissor lifts, scaffolding, fork lifts, and reach lifts will all be used throughout the construction of the basement. Finally, the basement walls will be waterproofed and backfilled with soil, and/or sand, pea gravel, birds eye, etc.
- Storm drain at the future Mesa Substation: FEIR, Volume I, Section 2.3.2.1, Site Preparation.
- MWD waterline relocation: FEIR, Volume I, Section 2.2.1.2 MWD Waterline Relocation
- Groundwater monitoring well decommissioning: FEIR, Volume I, Section 2.3.2.1 Site Preparation. Work efforts to accomplish the groundwater monitoring well decommissioning will be similar to the description found in this section. The only change will be that, due to the revised site grading sequencing as compared to that originally envisioned during the FEIR, the location of an additional groundwater monitoring well, specifically number OI-74A, will be impacted during the earlier phases of construction, and therefore will need to be removed at the same time as the other ten groundwater monitoring wells. As described in Footnote 11 on page 2-53 of the FEIR, it was originally anticipated that this particular well location would not be impacted until the final phase of grading. After all grading activities are completed, Operating

Industries Incorporated, which will monitor groundwater in the area, will confer with the U.S. Environmental Protection Agency and verify if this particular well site, or any others, will need to be re-installed at a location similar to its current placement. Even with the addition of well OI-74A, the overall duration of this activity remains at approximately 10 business days, as described in the FEIR.

- Transmission Line Relocations: FEIR, Volume I, Section 2.2.1.3, Transmission Line Features.
- Subtransmission Line Relocations: FEIR, Volume I, Section 2.2.1.4, 66-kV Subtransmission Line Features,
- Telecommunications Line Relocations: FEIR, Volume, I, Section 2.2.2, Telecommunications Routes,
- Distribution Line Relocations: FEIR, Volume I, Section 2.2.1.5, 16-kV Distribution Features.

All components that would be completed under NTPR-1 are in areas that have been subject to biological and cultural resources surveys and have been analyzed in the FEIR.

2.9 Construction Activities

2.9.1 Modifications to Existing Mesa Substation

Modifications at the existing Mesa Substation will include installation and removal of structural steel along with major and minor switchrack apparatus including, but not limited to, the associated control and power cables/conductor. New temporary bus dead end structures will be installed in the existing switchrack while some of the existing switchrack apparatus will be modified and/or removed along with some new apparatus installed in the existing positions of the current substation. A duct bank consisting of four 5-inch PVC conduits would be installed between the new Senior MEER and the communications room within the existing Operations Building to enable telecommunications circuits to be effectively transferred to the new substation.

2.9.2 Substation Support Components

2.9.2.1 Staging Yards

Preparation of the Staging Yards will include installation of temporary perimeter fencing as described in Sections 2.2.3 and 2.9.2.3, and, depending on existing ground conditions at the site, may include vegetation trimming and/or graded as described in Sections 2.2.2 and 2.9.2.2, and/or compaction of soil, as well as the potential for application of gravel or crushed rock.

Based on the type of equipment or facilities used at a Staging Yards, the particular staging yard may require the use of a temporary power supply. If existing distribution facilities are available, the particular staging yard may use a temporary service and meter to supply electrical power to that and adjacent staging yards. If the electrical service is not available on a permanent basis, the particular staging yard may use a portable generator on an intermittent basis, as required.

A majority of materials associated with the construction efforts will be delivered by truck to designated staging yards and then transported by truck to the construction work sites or, in some cases, materials may be delivered directly to the construction work sites. The staging yards may also be used to temporarily stage project-related equipment and/or materials.

2.9.2.2 Substation Grading

Grading will involve vegetation removal, installation of new permanent access roads and construction trailers, and land disturbance for construction staging. Staging yards for substation grading will be shared with other construction elements (described in Section 2.2.1). In addition, approximately 2,300 linear feet of new permanent access roads will be constructed in accordance with current SCE practices for construction and operations and management (O&M). Work on the grading for the future Mesa Substation is described in the FEIR, Volume I, Section 2.3.2.1, Site Preparation. See Section 11, Figure 3: Grading, Access Roads, and Drainages and Section 11, Figure 4: Staging Yard and Vegetation Removal[10].

2.9.2.3 Mesa Substation Temporary Fencing

Work at the future Mesa Substation will include construction of temporary fencing to enclose the construction work site in and around the future substation area. This temporary fence will be approximately 8 feet in height and will be topped with three-strand barbed wire for security, per normal SCE standards. When construction is complete, this temporary fence will be removed. The constructed substation will remain secure as all site perimeter fencing in place prior to construction will remain.

2.9.2.4 Retaining Walls

One substation retaining wall will be located on the north side of the substation along Potrero Grande Drive and will be approximately 1,550 feet long with a maximum height of approximately 18 feet. A 10-foot-tall substation perimeter wall will be mounted to the top of this substation retaining wall. A second substation retaining wall will be located on the northeast side of the substation at the corner of Potrero Grande Drive and Greenwood Avenue, and will be approximately 475 feet long. The first 208 foot stretch of this wall along Potrero Grande Drive will feature a maximum height of 10 feet with no fence mounted to the top of the retaining wall. The second 267 foot stretch of this wall along Greenwood Avenue will feature a maximum height of 19 feet with a 10-foot-tall perimeter wall mounted to the top of the retaining wall. In these cases, the exterior view of the substation, looking from either Potrero Grande Drive or Greenwood Avenue, will only consist of the substation perimeter wall. A third retaining will be installed along the southern perimeter of the project. The first 816 foot stretch of this wall will feature a maximum height of 8 feet with an 8 foot BetaFence (wrought iron) fence mounted to the top of the retaining wall. This stretch of the wall has a 34’ gate to accommodate MWD access to an existing manhole. The second 708 foot stretch of this wall will feature a maximum height of 8 feet with a 10 foot perimeter wall mounted to the top of the retaining wall (see Section 11, Figure 3). The Contractor will excavate for and install shoring to construct the retaining and perimeter walls. The Contractor will verify the compaction requirements for the wall footing area. Once the shoring is installed, they will place conduit, forms, and set rebar for the wall footing. The Contractor will then place concrete for the footing. When the footing is complete the contractor will construct the wall in sections with associated rebar, installing conduit behind the wall, and backfilling as they build vertically.

[10] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed.

2.9.2.5 Mechanical Electrical Equipment Room

This room will be a pre-engineered building constructed with metal framing, structural steel, and concrete masonry. An 11-foot-high below-grade basement will be constructed for the senior MEER. The basement walls will be framed up and poured in place using concrete and reinforcements as well. Finally the ground floor and associated structural steel will be installed and poured with lightweight concrete. Large concrete boom pumps will be used with concrete from mixer trucks for the placement of the concrete. Cranes, scissor lifts, scaffolding, fork lifts, and reach lifts will all be used throughout the construction of the basement. Finally, the basement walls will be waterproofed and backfilled with soil, and/or sand, pea gravel, birds eye, etc.

2.9.2.6 Storm Drain

Storm drain work at Mesa Substation will include installation of 21 manholes, v-ditches totaling approximately 6,007 linear feet, 33 inlets, 2 headwalls/wingwalls, a detention basin (approximately 387 feet by 396 feet, 2.67 acres), and approximately 4,900 lineal feet of storm drain pipe (in various diameters from 18 to 72 inches). The proposed detention basin will serve to mitigate additional peak flow and storm volumes associated with the post-development. The detention basin will be sized to accommodate the increased peak flow and runoff volume associated with the 50 and 100-year, 24-Hour Storm Event. The reservoir routing calculations were performed utilizing the CIVILDESIGN Engineering Software "RETARD" (ref. 4). After the modified rational method analyzed the pre- and post-development conditions. The difference in the peak flow are and storm volumes were used to size the detention basin. The post-development 50 and 100-year 24-hour storm event was routed through the detention basin to determine the peak outflow, storage volume, and maximum height. Adequate storage is provided and the depth of the basin is not exceeded. Installation of the storm drain pipe will include the installation of Reinforced Concrete Pipe (RCP), and the storm drain installation process will include but is not limited to trench excavation, pipe installation, and backfill with soil.

2.9.2.7 Metropolitan Water District Waterline Relocation

Typical pipe installation will include trench excavation and stockpile of spoils approximately 100 feet in width along the length of the new pipeline installation, and vegetation removal north of Potrero Grande Road (0.82 acre) and also within the areas described in Section 2.2.2 and 2.9.2.2. Concrete pours for thrust blocks and installation of air release/vacuum valves and pumping wells will be ongoing throughout the duration of pipeline work. Engineered shoring for the jacking and receiving pits will be installed to accommodate the jack-and-bore operation for installation of the new 84-inch pipeline under Potrero Grande. Due to the nature of this work and to shorten the window for possible cave-ins, the jack-and-bore operation will run 24 hours a day until completion. There may be some portions of the pipe installation prior to and certainly during the "tie-in" (connection of the new pipe with the existing pipe) that will also require construction efforts 24 hours a day. The existing pipeline within the future substation property will be removed after the tie-in of the new water line is complete.

2.9.2.8 Groundwater Monitoring Well Decommissioning

Construction activities associated with the groundwater monitoring well decommissioning will involve site preparation activities including the use of staging yards as described in Sections 2.2.1 and 2.9.2.1, vegetation removal and installation of new permanent access roads as described in Sections 2.2.2 and 2.9.2.2, and installation of BMPs, which will be maintained throughout the remaining construction activities. Well decommissioning will occur concurrent with substation vegetation removal and installation of new permanent access roads (see Section 11, Figures 3 and 4).

Typical groundwater monitoring well decommissioning will include excavation and stockpile of spoils approximately 50 feet square around each existing well location. Cranes will likely be used for pipe removals. See Section 11, Figure 5: MWD Waterline Relocation and Groundwater Monitoring Well Removal.

2.9.3 Transmission Line Relocations

Construction activities associated with the transmission line relocations will involve site preparation activities including the use of staging yards as described in Sections 2.2.1 and 2.9.2.1, vegetation clearing and installation of new permanent access roads as described in Sections 2.3 and 2.9.2.2, installation of crane pads associated with tower assembly and erection and installation of new permanent access roads and new structure pads. During transmission line relocations, crews will utilize existing public roads, and existing access roads to the maximum extent feasible. Approximately 2,300 linear feet of new permanent access roads will be constructed in accordance with current SCE practices for construction and operations and management (O&M).

Staging Yards for transmission line relocation construction activities will be at the locations described in Sections 2.2.1 and 2.9.2.1 (see Section 11, Figure 4~~11~~[11]). Typical structure assembly and erection areas will measure 200 by 200 feet. In locations of relatively level terrain, vegetation removal, as described in Sections 2.2.2 and 2.9.2.2, will typically occur only to prepare a construction work site (see Section 11, Figure 6). In areas with sloping site conditions, both vegetation removal, as described in Sections 2.2.2 and 2.9.2.2, and grading may be necessary to prepare a construction work site for construction. To support equipment and vehicle traffic, the graded areas will be compacted.

2.9.4 Subtransmission Line Relocations

Construction activities associated with the subtransmission line relocations will involve site preparation activities including the use of staging yards as described in Sections 2.2.1 and 2.9.2.1, vegetation clearing and installation of new permanent access roads as described in Sections 2.2.2 and 2.9.2.2, installation of crane pads associated with structure assembly and erection and installation of structure footings.

Staging Yards for construction activities will be co-located with the areas described in Sections 2.2.1 and 2.9.2.1. Typical structure assembly and erection areas will measure 200 by 150 feet, and vegetation removal will only occur to prepare a construction work site as described in Sections 2.4 and 2.9.2.2.

[11] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed.

2.9.5 Telecommunications Line Relocations

Construction activities associated with the telecommunications line relocations will involve site preparation activities including the use of staging yards as described in Sections 2.2.1 and 2.9.2.1, vegetation clearing and installation of new permanent access roads as described in Sections 2.2.2 and 2.9.2.2, and installation of structure footings. These relocations will include installation of three manholes, approximately 1,100 feet of duct banks with new conduit, and approximately 4,800 feet of underground fiber cable (see Section 11, Figure 8: Telecommunication Line Relocations).

Staging Yards for construction activities will be co-located with the areas described in Sections 2.2.1 and 2.9.2.1.

2.9.6 Distribution Line Relocations

Construction activities associated with the distribution line relocations will involve site preparation activities during the use of staging yards as described in Sections 2.2.1 and 2.9.2.1, vegetation clearing and the installation of new permanent access roads as described in Sections 2.2.2 and 2.9.2.2, and the installation of crane pads within the general disturbance area (see Section 11, Figure 9) associated with structure assembly and erection, and installation of structure footings. These relocations will include installation of approximately 2,250 feet of new underground cable in existing conduits through five existing vaults or manholes along Potrero Grande, Markland, and Vail, installation of a new pad-mounted switch near the intersection of Vail and Appian Way and replacement of approximately 200 feet of underground conductor from an existing manhole to an existing pole at the east end of Appian Way.

Staging Yards for construction activities will be co-located with the areas described in Sections 2.2.1 and 2.9.2.1. Typical construction work sites will measure 50 by 50 feet, and vegetation removal, as described in Sections 2.2.2 and 2.9.2.2, will only occur to prepare a general disturbance area. Site preparation may be necessary to accommodate new TSP installation and to perform cable pulling operations.

2.10 Ancillary Activities

During modifications to the existing Mesa Substation, transmission line relocations, subtransmission line relocations, telecommunications line relocations, and distribution line relocations, crews will utilize existing public roads and existing access roads to access the existing and future substation.

New permanent access roads and new driveways will be used as described in Sections 2.2.1, 2.2.2, 2.2.6, and 2.2.7.Construction of substation support components will include installation of BMPs, which will be maintained throughout the remaining construction activities. Construction will adhere to all relevant Storm Water Pollution Prevention Plan (SWPPP) including dust control measures, and other APM, and MM requirements as they apply. Most areas that are finish graded will be temporarily or permanently stabilized where practical.

For the MWD waterline relocation, noise mitigation such as sound walls may be necessary and stockpiles from soil excavation for open trench cuts and jack-and-bore pits will be visible while work is in progress. Cranes will likely be used for pipe installation (see Section 11, Figure 5: MWD Waterline Relocation and Groundwater Monitoring Well Removal).

Approximately 2,300 linear feet of new permanent access roads, 2,170 linear feet north of Potrero Grande and 130 feet south of SR-60 and adjacent to existing access roads (see Section 11, Figure 3) will be constructed in accordance with current SCE practices for construction and operations and management (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.

New permanent access roads have been designed to have a minimum drivable width of 14 feet with 2 feet of shoulder on each side. Additional roadway width may be required to accommodate activities such as vehicle turning, vehicle turnouts, side cast, and back slope. Drainage improvements (e.g., v-ditches, down drains, energy dissipaters) will be installed at select existing and new permanent access road locations to divert water away from those access roads for erosion control.

2.11 Excavation

During construction, excavated soils will be used to backfill excavations provided the soils are non-contaminated and non-weed infested. Further, no debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products, and other substances which could be hazardous to native plants or wildlife, or other organic or earthen material from any construction or other associated project-related activity shall be allowed to contaminate soil in any construction work site.

To prevent entrapment of wildlife, all trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. For open trenches only, these may instead have wildlife escape ramps within the trench maintained at intervals of no greater than 100 feet. These ramps shall have a maximum slope not to exceed 2:1. All trenches, auger holes, or other excavations shall be inspected a minimum of three times per day and immediately prior to backfilling.

2.11.1 Modifications to Existing Mesa Substation

New PVC duct banks will be installed to connect the existing operating theater telecommunication room at Mesa Substation with the new MEER. The excavations will range from approximately 2 feet to 20 feet in depth and will be encased in concrete before being backfilled with soil. Below grade items like existing foundations, conduits, and control cable trenches will be removed to allow for construction of the MEER and future 220-kV switchrack. See Section 2.11.7, Excavated Volumes by Component, for a summary of excavation volumes associated with NTPR-1.

2.11.2 Substation Support Components

2.11.2.1 Substation Grading

The grading will include vegetation clearing, as described in Sections 2.2.2 and 2.9.2.2, under NTPR-1 (see Section 11, Figure 4: Staging Yard and Vegetation Removal[12]). The work will include grading of approximately 540,000 cubic yards (CY) of soil over 9.31 acres (see Section 11, Figure 3: Grading, Access Roads and Drainages). Cuts and fills will be made with large earthmovers (scrapers). Support equipment for this task is detailed in Appendix C. Water tanks and/or stand tanks will be used for

[12] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed.

the storage and delivery of water to the site for compaction and dust control. See Section 2.11.7, Excavated Volumes by Component, for a summary of excavation volumes associated with NTPR-1.

2.11.2.2 Mesa Substation Temporary Fencing

Under NTPR-1, there are no excavation activities associated with temporary fencing.

2.11.2.3 Retaining Walls

Under NTPR-1, there are no excavation activities specifically associated with retaining walls because they are included as part of the effort identified in Section 2.11.2.1, Substation Grading.

2.11.2.4 Mechanical Electrical Equipment Room

Under NTPR-1, there are no excavation activities specifically associated with senior MEER because they are included as part of the effort identified in Section 2.11.2.1, Substation Grading.

2.11.2.5 Storm Drain Installation

Installation of approximately 4,900 lineal feet of storm drain pipe (various sizes from 18–72 inch diameter) will include the installation of RCP, and the pipe installation process will include, but is not limited, to trench excavation, pipe installation, and backfill with soil. Support equipment for this task is detailed in Appendix C. The depth from grade to the top of the duct banks will vary from 3 to 25 feet along the pipeline based on site-specific conditions. See Section 2.11.7, Excavated Volumes by Component, for a summary of excavation volumes associated with NTPR-1.

2.11.2.6 Metropolitan Water District Waterline Relocation

For the MWD waterline relocation, significant cuts to depths in excess of 35 feet will be required for installation of the new 84-inch diameter pipe. Due to the nature of this work and to shorten the window for possible cave-ins, the jack-and-bore operation will run 24 hours a day until completion. Support equipment for this task is detailed in Appendix C. See Section 2.11.7, Excavated Volumes by Component, for a summary of excavation volumes associated with NTPR-1.

2.11.2.7 Groundwater Monitoring Well Decommissioning

Under NTPR-1, groundwater monitoring well decommissioning excavation activities will consist of drilling of the original well borehole to a depth of 10 feet below ground surface to remove the upper casing and annular materials and sealing of the resultant borehole from bottom to top with bentonite slurry. Support equipment for this task is detailed in Appendix C.

2.11.3 Transmission Line Relocations

To support the installation of the permanent LST and TSP structures, pour in place concrete foundations will be installed. See Table 2-3 in Section 2.3.3 of the FEIR for a range of footing sizes, and for further description of transmission construction activities. To support the transmission relocations existing LST and TSP structures will be removed. These removals will include removal of the existing foundations to various depths, ranging from 2 to 3 feet below grade, to complete extraction. In addition to the permanent structures required for the relocations, six temporary steel poles will be installed. These structures are direct bury to various depths. Non-contaminated and non-weed infested excavated soil from relocation activities will be used on site to support other

activities, including back filling removed foundations and site grading. Support equipment for this task is detailed in Appendix C.

2.11.4 Subtransmission Line Relocations

To support the installation of the four permanent TSP structures, pour in place concrete foundations will be installed. See Section 2.2.1.4 of the FEIR for a range of footing sizes or Section 2.3.3 for further description of subtransmission construction activities. To support the transmission relocations existing LST structures will be removed. These removals will include removal of the existing foundations to various depths, ranging from 2 to 3 feet below grade, to complete extraction. In addition to the permanent structures required for the relocations, ~~12~~ 16[13] temporary wood poles will be installed. These structures are direct bury to various depths. Non-contaminated and non-weed infested excavated soil from relocation activities will be used on site to support other activities, including back filling removed foundations and site grading. Support equipment for this task is detailed in Appendix C.

2.11.5 Telecommunications Line Relocations

Three communication manholes will be installed. Manholes will measure approximately 4 feet long by 4 feet wide by 6 feet deep. Each manhole location requires an excavation measuring at least 6 feet long by 6 feet wide by 8 feet deep.

Approximately 1,100 feet of duct bank will be installed. This activity will include the installation of PVC as well as trench excavation, duct installation, backfill with slurry mix, and capping with soil. The depth from grade to the top of the duct banks will be at least 3 feet and will vary along the route based on site-specific conditions. Excess excavated soil will be hauled off site for disposal at an SCE-approved facility. Any open trench will be secured at the end of each work day to protect the public from fall hazards and to prevent accidental wildlife entrapment, including the use of steel plates to maintain access to driveways, parking facilities, sidewalks, and roads. To prevent entrapment of wildlife, all trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. For open trenches only, these may instead have wildlife escape ramps within the trench maintained at intervals of no greater than 100 feet. These ramps shall have a maximum slope not to exceed 2:1. All trenches, auger holes, or other excavations shall be inspected a minimum of three times per day and immediately prior to backfilling. See Section 2.3.5 of the FEIR for further description of telecommunications construction activities. Support equipment for this task is detailed in Appendix C.

2.11.6 Distribution Line Relocations

Under NTPR-1, the only excavation activities associated with distribution line relocations are related to the installation of conduit along Loveland Street for the street light undergrounding and the installation of a pad-mounted structure at the intersection of Vail and Appian Way. Support equipment for this task is detailed in Appendix C.

[13] October 2017: The project will now use 16 temporary wood poles, changed from the previously approved 12 temporary wood poles, to re-route the Mesa-Walnut-Hillgen-Industry-Mesa-Reno and Mesa-Laguna Bell-Narrows 66-kV lines.

2.11.7 Excavated Volumes by Component

The approximate excavated volumes by NTPR-1 Project component are as follows.

- Modifications to Existing Mesa Substation: 60,000 cubic yards
- Substation Grading: approximately 540,000 cubic yards
- Mesa Substation Temporary Fencing: 0 cubic yards[14]
- Retaining Walls: 0 cubic yards[1]
- Mechanical Electrical Equipment Room: 0 cubic yards[1]
- Storm Drain Installation: 11,000 cubic yards
- Metropolitan Water District Waterline Relocation: 6,900 cubic yards
- Groundwater Monitoring Well Decommissioning: 0 cubic yards
- Transmission Line Relocations: 1,200 cubic yards
- Subtransmission Line Relocations: 570 cubic yards
- Telecommunications Line Relocations: 150 cubic yards
- Distribution Line Relocations: 10 cubic yards

2.12 Implementation of Applicant Proposed Measures and Mitigation Measures

During construction and operation of the Project components described above, SCE or its contractor(s) will implement all applicable APMs and MMs as identified in the Mesa 500-KV Substation Project FEIR to the extent consistent with Final Decision 17-02-015 issued by the CPUC on February 16, 2017. Table ES-1 in Appendix B and Table 10.1 below collectively include a listing of all APMs and MMs applicable to the work that would be conducted under NTPR-1, and includes a discussion of how each measure will be implemented during construction.

Prior to construction, SCE will communicate the environmental concerns and appropriate work practices to all SCE crews and contractors through a Worker Environmental Awareness Plan (WEAP) training. The training will include, but is not limited to, a review of archaeological and paleontological resources, biological resources, dust control measures, hazardous waste and spill prevention, construction fire control and emergency response measures, noise control measures, and SWPPP BMPs.

All required preconstruction surveys for biological resources and cultural resources will be conducted prior to the start of construction, as applicable.

[14] Mechanical Electrical Equipment Room excavation, retaining walls excavation, and Mesa Substation Temporary Fencing excavation are included in the Modifications to Existing Mesa Substation excavation total.

3.0 Project Disturbance

3.1 Mesa 500-kV Substation

3.1.1 Location

The Mesa 500-kV Substation component of the Project is bounded by the Pomona Freeway (CA 60) to the south, Greenwood Avenue to the east, Markland Avenue to the west, and Potrero Grande Drive to the north (Section 11, Figure 2: Mesa Substation and Associated Routes, Sheets 1–3). Currently, the existing Mesa Substation is a 21.6-acre substation located on the 83.3-acre SCE fee-owned parcel. For reference, Mesa Substation is located within the Monterey Park, United States Geological Survey (USGS) 7.5' topographic quadrangle.

The Mesa 500-kV Substation component of the Project is the construction of a new 500-/220-/66-/16-kV substation and the demolition of the existing 220-/66-/16-kV substation. NTPR-1 covers a variety of initial construction activities within the substation site and adjacent areas, including relocating a portion of an existing 72-inch-diameter MWD pipeline that traverses the Mesa Substation site and replacing it with an 84-inch-diameter pipeline. All work referenced in NTPR-1 is necessary to enable the next phases of construction to proceed once the new pipeline alignment has been established.

3.1.2 Disturbance Area

Temporary and permanent ground disturbance areas associated with the substation Project components included in NTPR-1 are captured in Table 2 below. It is estimated that construction and operation of the Project components under NTPR-1 would result in both temporary and permanent disturbances.

Table 3.1. NTPR-1 Ground Disturbance Areas

Substation Project Component	Permanent Disturbance NTPR-1[a]	Temporary Disturbance NTPR-1[a]
Modifications to Existing Mesa Substation and Existing Roads	0.00 acre [b]	21.18 acre [b]
Substation Grading	41.47 acres	20.07 acres
Staging Yards	0.00 acres	32.34 acres
Detention Basin	2.67 acres	0.00 acres
Access Roads	0.00 acres	5.72 acres
Retaining Walls	0.00 acres	0.00 acres
Mechanical Electrical Equipment Room	0.00 acres	0.00 acres
Storm Drain Installation	0.00 acres	0.00 acres
Metropolitan Water District Waterline Relocation	0.00 acres	1.94 acres
Groundwater Monitoring Well Decommissioning	0.00 acres	0.00 acres
Transmission Line Relocations	4.85 acres [c]	5.61 acres [c]

Substation Project Component	Permanent Disturbance NTPR-1[a]	Temporary Disturbance NTPR-1[a]
Subtransmission Line Relocations	0.03 acres [c]	1.50 acres [c]
Telecommunications Line Relocations	0.00 acres [c]	0.93 acres [c]
Distribution Line Relocations	0.01 acres [c]	0.64 acres [c]
Total	**49.03 acres [d]**	**89.91 acres [d]**

[a] At numerous locations within the NTPR-1 footprint, multiple project features and related activities may result in ground disturbance on the same areas . To ensure that each disturbed location is counted only once, the following precedence orders were employed in attributing disturbance. First, permanent disturbance by one or more substation project component took precedence over any temporary disturbance. Second, specific substation project components were rank-ordered for attributing disturbance in descending order as follows: Substation Grading, Staging Yards, Metropolitan Water District Waterline Relocation, Transmission Line Relocations, Subtransmission Line Relocations, Distribution Line Relocations, Telecommunications Line Relocations, Groundwater Monitoring Well Decommissioning, Storm Drain Installation, Mechanical Electrical Equipment Room, and Retaining Walls.

[b] Modifications to Existing Mesa Substation are considered a temporary disturbance.

[c] These acreage calculations reflect only true ground disturbance, not actual new linear feature installations.

[d] In the FEIR, permanent and temporary disturbance calculations include portions of the existing Mesa Substation and existing Mesa Substation access roads.

3.2 Linear Construction Activities

3.2.1 Location

The linear construction activities component of the Project is the construction of transmission, subtransmission, distribution, and telecommunications related installations and upgrades required for the redevelopment of the existing Mesa Substation to a 500-kV substation. NTPR-1 includes the removal, relocation, and construction of transmission, subtransmission, distribution, and telecommunications structures and lines occurring primarily within the cities of Monterey Park, Montebello, and Commerce within existing SCE ROW, and within properties that are currently fee-owned or being acquired by SCE.

3.2.2 Disturbance Area

Temporary and permanent disturbance areas associated with the linear construction project components included in NTPR-1 are captured in Table 3 below. It is estimated that establishment and operation of the linear construction project components under NTPR-1 would result in both temporary and permanent disturbances. The FEIR does not break down disturbance areas by individual NTPR (see FEIR Table 2-8).

4.0 Construction and Activity Schedule

Construction and use of the Project components described above is anticipated to begin as early as September 2017 and conclude at the end of the Project construction phase. Most activities included under NTPR-1 would be conducted between 7:00 a.m. and 8:00 p.m. (weekdays) and 9:00 a.m. and 6:00 p.m. (Saturdays). One activity, the MWD waterline relocation work, will require a 24-hours per day schedule for tie-in activities during shutdown. Work performed during these hours, and work performed outside of these hours, or on Sundays or holidays would be conducted in compliance with the City of Monterey Park Construction Noise Threshold Criteria. Additional information is provided in SCE's Project-specific Noise Plan.

Figure 10 in Section 11 provides the summary, high-level Project schedule for construction activities associated with NTPR-1.

5.0 Construction Equipment and Personnel

The types of equipment and number of personnel needed to construct the Project components included in NTPR-1 are presented below.

5.1 Total and Peak Personnel

The Project anticipates that an average of approximately 129 construction personnel will work on any given day, with a maximum of approximately 313 construction workers on site on a given day

during peak grading activities. Crews will work concurrently whenever possible; however, the estimated deployment and number of crewmembers will vary depending on factors such as material availability, resource availability, weather, and construction scheduling.

5.2 Construction Equipment

Construction will be performed by either SCE's construction crews or its contractors. The Project will comply with applicable local ordinances for construction activities or will request approval for a Minor Project Change from the applicable jurisdiction and CPUC. A list of construction equipment and vehicles to be used during construction is provided in Appendix C of the FEIR and is summarized in Appendix C (Construction Equipment) to this NTPR.

6.0 Biological Resource Surveys

Survey were conducted to collect baseline biological resource information for the Mesa Substation Project, as described in Appendix B, and summarized below. Focused surveys within the areas included in NTPR-1 were completed in conjunction with Segments 6, 7, 8, and/or 11 of the Tehachapi Renewable Transmission Project (TRTP) in 2007, 2009, 2010, and 2011. Biological surveys were conducted specifically for the Project Component in 2014, 2015, and 2017.

6.1 Special-Status Wildlife Species

6.1.1 Amphibians and Reptiles

Habitat for southwestern pond turtle (*Clemmys marmorata pallida*) is not present in areas included in NTPR-1 because no perennial water is present. A preconstruction habitat assessment for the western spadefoot (*Spea hammondii*) was conducted in accordance with MM BR-1 and SAA Avoidance and Minimization Measure 2.9 in May 2017. Habitat for the western spadefoot (*Spea hammondii*) also is not present in areas included in NTPR-1.

6.1.2 Avian Species

Areas included in NTPR-1 provide potential nesting habitat for bird species (including burrowing owls and raptors) that are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. During TRTP nesting bird surveys, preconstruction surveys, sweeps, and construction monitoring activities, passerine and raptor nests were observed within the central and western portions of the Project component (SCE 2017), as further detailed in Table 4-2 of Appendix B. Least Bell's vireo (*Vireo bellii pusillus*) habitat is not present in areas included in NTPR-1.

Coastal California gnatcatcher were observed foraging and nesting within Mesa Substation during the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys conducted for TRTP (ICF 2010b, 2011a). Coastal California gnatcatchers were also observed foraging and nesting within nonnative vegetation at Mesa Substation during nesting bird surveys for TRTP in 2012 and 2013 (SCE 2017). During the protocol surveys in 2015 and 2017, two nesting pairs and their nests were observed adjacent to Mesa Substation.

6.1.3 Mammals

Special-status bats have a low likelihood of occurring in areas included in NTPR-1 and have not been observed in this area.

6.2 Special-Status Plant Species

Special-status plant surveys conducted from 2007-2010, and in 2015 (Noreas 2015) and 2017 identified eight southern California black walnut (*Juglans californica*) trees within areas included in NTPR-1. All eight will be removed as a result of construction. No other special-status plants are present within areas included in NTPR-1. No regulated trees are present within areas included in NTPR-1. Based on negative survey results following extensive special-status plant surveys over six different survey years, it is not anticipated that any additional special-status plant species will be observed within the areas included in NTPR-1.

6.3 Vegetation Communities

Vegetation communities mapped within the Project component include the following.

- California annual grassland
- Coastal sage scrub
- Disturbed/developed
- Ephemeral drainages
- Man-induced wetlands
- Mule fat scrub
- Non-native woodland
- Riparian woodland
- Ruderal[15]

Five of these—coastal sage scrub, ephemeral drainages, man-induced wetlands, mule fat scrub, and riparian woodland —are considered sensitive natural vegetation communities (Ecology and Environment 2016). Vegetation communities were described to be consistent with the *TRTP Revised Biological Resources Specialist Report* (Aspen 2009). Communities not identified for the TRTP project were characterized by Insignia (2015a).

6.4 Preconstruction Surveys

Prior to construction and activities in a new construction work site that may include vegetation clearing, staging, and stockpiling, or other activities with the potential to directly or indirectly affect wildlife, the applicant will retain a qualified biologist approved by the CPUC to conduct preconstruction surveys for sensitive biological resources, including special-status plant species and special-status wildlife, and nesting birds in all areas of temporary and permanent disturbance in accordance with MM BR-1. Preconstruction surveys will be species- and resource-appropriate and

[15] The FEIR (Ecology and Environment 2016) identifies this as non-native vegetation.

typically conducted a maximum of 14 days prior to construction as approved by the CPUC. Additional pre-construction sweeps will be conducted within 24 hours of construction activities daily. See Table 7 for a summary of pending preconstruction surveys.

As required by MM BR-12, prior to the start of construction, protocol-level preconstruction surveys were conducted by a qualified biologist approved by the CPUC for the coastal California gnatcatcher in Project component areas where suitable habitat exists in accordance with the Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines (USFWS 1997). These preconstruction survey results have been incorporated into this NTPR-1.

As required by MM BR-11, prior to the start of construction, preconstruction surveys for active bird nests will be conducted consistent with the Project's CPUC-approved Nesting Bird Management Plan. The Nesting Bird Management Plan includes measures and an adaptive management program to avoid and minimize impacts to special-status birds, and MBTA- or California Fish and Game Code-protected bird species during nesting periods during Project construction.

As required by APM BIO-1, during the appropriate phenological periods, formal preconstruction surveys for rare plants would be conducted in areas where special-status plants have the potential to occur within the construction areas. This has been completed and no new observations of special-status plants were documented. The results of these surveys have been incorporated into this NTPR-1. Prior to construction, the locations of 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. In compliance with MM BR-4, a noxious weed and invasive plant inventory was completed, and incorporated into the Noxious and Invasive Weed Control Plan.

6.5 Impact Compensation

As required by MM BR-1 and SAA Avoidance and Minimization Measure 2.9, a habitat assessment was conducted to determine if habitat for western spadefoot toad is present. Appropriate habitat was found within Whittier Narrows Recreation Area, as documented in the Habitat Assessment for Western Spadefoot (ICF 2017a), outside of the NTPR-1 areas.

The Project has developed, with consultation, review, and comment from the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and CPUC, a Habitat Restoration and Mitigation Plan (HRMP). The HRMP includes an estimate of the total area of sensitive natural communities that will be permanently and temporarily impacted from the Project, including all coastal California gnatcatcher habitat and riparian habitat. The HRMP ensures the revegetation of all temporary impact areas and summarizes mitigation for permanent impacts on sensitive natural communities, coastal California gnatcatcher occupied breeding habitat, California black walnut, and jurisdictional wetlands and water features.

Temporary and permanent impacts by Project component are provided in Table 6.1 below. Compensation for these impacts is specified in the conditions outlined in the Project's HRMP. Potential permanent impacts from the Project will affect a total of 49.0 acres, the majority of which are disturbed/developed (25.1 acres) areas and ruderal areas (9.6 acres). Of the remaining 14.3 acres, a 3.0-acre impact will occur on sensitive native habitats. All construction work sites adjacent to and within sensitive habitats will be field-adjusted to avoid and/or minimize impacts on sensitive species and habitats to the greatest extent feasible.

Potential temporary impacts from the Project will affect a total of 89.9 acres, the majority of which contain disturbed/developed (69.6 acres) and ruderal (12.9 acres) communities. Of the remaining 7.4 acres, a 3.0-acre impact will occur on sensitive native habitats. All construction work sites adjacent to and within sensitive habitats will be avoided and/or minimized to the greatest extent feasible.

Table 6.1. Maximum Potential NTPR-1 Project Component-Related Impacts by Vegetation Community (all calculations in acres)

	Modifications to Existing Mesa Substation		Substation Grading		Staging Yards		Retaining Walls, Mechanical Electrical Equipment Room, Storm Drain Installation[1]		Detention Basin		Access Roads		Metropolitan Water District Waterline Relocation		Groundwater Monitoring Well Decommissioning		Transmission Line Relocations		Subtransmission Line Relocations		Telecommunications Line Relocations		Distribution Line Relocations		Total		
Vegetation	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Grand Total**
California Annual Grassland	0.00	0.00	0.00	0.27	0.00	0.16	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.04	0.00	0.00	3.15	1.15	0.00	0.04	0.00	0.17	0.00	0.00	3.15	1.84	**4.98**
CDFW Riparian – Mulefat Scrub	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	**0.04**
CDFW Riparian – Riparian Woodland	0.00	0.00	0.14	0.00	0.00	<0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.03	**0.17**
CDFW Streambed	0.00	0.02	2.50	0.84	0.00	0.27	0.00	0.00	0.15	0.00	0.00	0.11	0.00	0.06	0.00	0.00	0.01	0.08	0.00	0.03	0.00	0.00	0.00	0.00	2.65	1.41	**4.07**
Coastal Sage Scrub	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.04	0.00	0.00	0.00	0.00	0.00	1.36	**1.36**
Disturbed/ Developed	0.00	21.02	21.27	8.79	0.00	29.50	0.00	0.00	2.53	0.00	0.00	5.50	0.00	1.27	0.00	0.00	1.30	2.25	0.01	0.29	0.00	0.66	<0.01	0.33	25.11	69.61	**94.73**
Mulefat Scrub	0.00	0.00	0.20	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.16	**0.35**
Non-Native Woodland	0.00	0.13	8.10	0.33	0.00	0.64	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.57	0.00	0.00	0.08	0.76	0.00	0.02	0.00	0.09	0.00	0.00	8.18	2.55	**10.73**
Ruderal	0.00	<0.01	9.26	8.39	0.00	1.73	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.31	1.29	0.02	1.07	0.00	0.00	<0.01	0.31	9.60	12.87	**22.47**
Man-Induced Wetlands	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	**0.04**
Total	**0.00**	**21.18**	**41.47**	**20.07**	**0.00**	**32.34**	**0.00**	**0.00**	**2.67**	**0.00**	**0.00**	**5.72**	**0.00**	**1.94**	**0.00**	**0.00**	**4.85**	**5.61**	**0.03**	**1.50**	**0.00**	**0.93**	**0.01**	**0.64**	**49.03**	**89.91**	**138.94**

[1] At numerous locations within the NTPR-1 footprint, multiple project features and related activities may result in ground disturbance on the same areas. To ensure that each disturbed location is counted only once, the following precedence orders were employed in attributing disturbance. First, permanent disturbance by one or more substation project component took precedence over any temporary disturbance. Second, specific substation project components were rank-ordered for attributing disturbance in descending order as follows: Substation Grading, Staging Yards, Metropolitan Water District Waterline Relocation, Transmission Line Relocations, Subtransmission Line Relocations, Distribution Line Relocations, Telecommunications Line Relocations, Groundwater Monitoring Well Decommissioning, Storm Drain Installation, Mechanical Electrical Equipment Room, and Retaining Walls.

6.5.1 Significance

With implementation of the applicable APMs and MMs as contained in the FEIR, and other avoidance and protection measures, all potential impacts under NTPR-1 would be less than significant as described in the FEIR.

7.0 Cultural and Paleontological Resource Assessments

7.1 Cultural Resources

Seven cultural resources studies, including three surveys and four studies of the historic-era infrastructure, and an accompanying records search were conducted for the Project (Williams et al. 2014; Chiang and Tinsley Becker 2014; DeBiase and Tinsley Becker 2015; Tinsley Becker et al. 2015; Williams et al. 2014; Williams 2015; CPUC 2016; ICF 2017b). Cultural resources within this portion of the Project will be protected as outlined in the Cultural Resource Management Plan for the Mesa Substation Project (Appendix D). Protection of cultural resources within the Area of Potential Effect (APE) will consist of Environmentally Sensitive Area (ESA) fencing and/or flagging, and/or monitoring as outlined in the HPMP.

7.2 Paleontological Resources

A Paleontological Resources Management Plan (PRMP) has been completed for the Mesa 500-kV Substation Project and previously submitted to the CPUC (Paleo Solutions 2016; Appendix E). The Project contains construction work sites in three geological formations that range from low, to medium, to high paleontological potential (Paleo Solutions 2016:6–7). Methods for protection, monitoring, and treatment of paleontological resources are outlined in the PRMP.

8.0 Mitigation Monitoring, Compliance, and Reporting Program Implementation

The Mitigation Monitoring, Compliance, and Reporting Program Implementation Table (Table ES-1) contained in Appendix B and Table 10.1 below collectively specify how SCE or its contractor(s) will employ each measure during construction of Project components covered under NTPR-1.

9.0 Jurisdictional Permits and Agency Approvals

9.1 Waters and Wetlands

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 (ICF 2010a, 2010c, 2011b). The delineations were conducted in accordance with the U.S. Army Corps of Engineers (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 offsite 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 of the feature and/or the top of bank or extent of riparian vegetation. On June 3 and June 4, 2014, Insignia biologists conducted a survey of the Project component. 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 project area and spot-checked all wetlands and waters identified for the TRTP.

On December 15 through 18, 2014, Insignia biologists conducted a wetland delineation of the transmission, subtransmission, distribution, and telecommunications line work sites (Insignia 2015c). The delineations were conducted using the same methodology as the ICF delineations. Impacts on recorded jurisdictional features included in NTPR-1 have been authorized by the agencies listed in Section 9.3, Permits and Approvals, under the corresponding permits.

9.2 Coastal California Gnatcatcher

The Biological Assessment (Insignia 2015b) and Biological Opinion (UFSWS 2017) issued for the Project on September 22, 2017 analyzed impacts on coastal California gnatcatcher from the Mesa 500-kV Substation Project. The evaluation concluded that the Project will result in permanent and temporary impacts on occupied breeding habitat for coastal California Gnatcatcher, resulting in the direct take of two pairs of coastal California gnatcatchers. A total of 8 acres (4 acres per pair) of coastal California gnatcatcher habitat is anticipated to be impacted, resulting in a mitigation requirement of 16 acres (2:1 ratio).

Both temporary and permanent impacts to sensitive vegetation communities that may provide non-breeding habitat (i.e., foraging) for the coastal California gnatcatcher will be mitigated for in accordance with MM BR-3 at offsite locations at a 2.5:1 ratio, as further described in the HRMP.

9.3 Permits and Approvals

Table 9.1 provides a summary of jurisdictional permits, a description of consultations and permits involved, and the current status of those permits.

Table 9.1. Jurisdictional Permits and Agency Approvals

Jurisdiction	Consultation or Permit	Permit Status
United States Army Corps of Engineers (USACE)	Consultation with the USACE, Regional Water Quality Control Board, CDFW, and USFWS for a Clean Water Act. Section 404 permit.	Issued: SPL-2015-00324-SLP
United States Fish and Wildlife Service (USFWS)	Take authorization and consultation with the USFWS. Consultation for Section 7 of the Federal Endangered Species Act and issuance of a Biological Opinion.	Issued: FWS-LA-15B0327-17F1426
California Department of Fish and Wildlife (CDFW)	Consultation for Section 1600 of the Fish and Game Code (streambed alteration agreement).	Agreement issued: 1600-2016-0034-R5, REV. 1

California State Water Resources Control Board	Notice of Intent to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Orders 2010-0014-DWQ and 2012- 0006-DWQ and Section 401 Permit associated with issuance of a Clean Water Act Section 404 Permit.	Issued: 16-019

10.0 Preconstruction Compliance Activities Outstanding

As stated earlier, SCE or its contractor will implement all applicable APMs and MMs as identified in the Mesa 500-kV Substation Project FEIR. However, some preconstruction compliance activities and items contained in the Mitigation Monitoring and Reporting Program Implementation Table (Table ES-1) contained in Appendix B, have not yet been completed, and may not be completed prior to issuance of the NTP; these are presented in Table 10.1 below. SCE will also implement all preconstruction requirements applicable for work under NTPR-1 as required in respective agency approvals mentioned in Section 9.0, Jurisdictional Permits and Agency Approvals. SCE is also responsible for compliance with the measures and permit conditions applicable during the preconstruction and construction phases of activities. Table 10.2 summarizes all APMs and MMs that apply to NTPR-1 and what SCE will do to meet those requirements.

Table 10.1. Outstanding Compliance Activities

Measure	Measure or Survey	Status
FEIR APM BIO-4; FEIR MM BR-12; SAA AMM 2.12; BO CM 14	Preconstruction surveys for coastal California gnatcatcher	Preconstruction surveys will be conducted as specified no more than 7 days prior to the start of ground-disturbing activities within the 2018 breeding and nesting season. Establishment of a buffer and monitoring until it is determined the nests are no longer active.
FEIR APM BIO-6; FEIR MM BR-11	Preconstruction surveys for nesting birds	Preconstruction surveys will be conducted as specified no more than 14 days prior to the start of ground-disturbing activities. Establishment of a buffer and monitoring until it is determined the nests are no longer active.
FEIR MM BR-1	Preconstruction clearance sweeps for special-status species	Sweeps for special-status species at all access, staging, and laydown/construction work sites where suitable habitat is present within approximately 24 hours of construction activities each day.
FEIR MM BR-4	Preconstruction surveys for state-, county-, and locally designated noxious weed species.	Included with preconstruction surveys for rare plants.
SAA AM 1.11; SAA AMM 2.44	Invasive Species Education Program	The Project will develop and implement a WEAP for all Project personnel. The WEAP includes slides discussing compliance with various mitigation measures to prevent the spread and introduction of invasive species. The WEAP is required for all persons working within the Project site prior to the commencement of any Project activities during the pre-construction meeting.
FEIR MM BR-5	Worker Environmental Awareness Program	The Project will develop and implement a WEAP for all Project personnel. The program must be submitted to the CPUC at least 30 days prior to the start of construction for review.
FEIR MM CR-1	Flag and Avoid Known Unevaluated Historic Sites	A 10 foot buffer will be placed around the historic-era debris and concrete structure at site P-19-186889.
FEIR MM CR-2	Worker Training for Cultural and Paleontological Resources	Prior to commencement of any Project-related construction activities, all SCE, contractor, and subcontractor Project personnel will receive training.

FEIR APM = Applicant Proposed Measure included in the FEIR

FEIR MM = Mitigation Measure included in the FEIR
SAA AM = CDFW Streambed Alteration Agreement Administrative Measure
SAA AMM = CDFW Streambed Alteration Agreement Avoidance and Minimization Measure
BO MM = USFWS Biological Opinion Mitigation Measure

Table 10.2. APM and Mitigation Measure Implementation Table

APMs and Mitigation Measures	Applicable to NTP-1?	SCE Implementation Plan
Aesthetics		
MM AES-1: Staging Area Screening	Yes	SCE will screen all staging areas with perimeter screening fences.
MM AES-2: Minimize Clearing and Ground Disturbance and Improve Disturbed Areas	Yes	SCE will minimize clearing and ground disturbance and improve disturbed areas.
MM AES-3: Landscape and Aesthetic Treatment along Potrero Grande Drive	Yes	SCE will implement the approved Landscape and Aesthetic Treatment Plan.
MM AES-4: Graffiti Deterrence	Yes	SCE will implement the approved Graffiti Prevention and Abatement Plan.
MM AES-5: Glare Reduction	Yes	SCE will ensure that all new transmission and other structures with metal surfaces installed by SCE will be non-reflective and new conductors non-specular.
MM AES-6: Night Lighting	Yes	SCE will use the minimum lighting necessary for safety and security for nighttime activities and operations, orient downward and shield all lighting, and ensure that lighting proposed at the Mesa Substation shall consist of light-emitting diode lights in all areas where operations or maintenance activities would occur.
Air Quality		
APM-AIR-01: Fugitive Dust	Yes	SCE will apply dust suppressant to surfaces disturbed by construction activities, and all unpaved roads will be stabilized using a water/chemical suppressant.
APM-AIR-02: Tier 3 Engines	Yes	SCE will ensure that all off-road diesel equipment between 100 and 750 horsepower us engines compliant with Tier 3 non-road engine standards. SCE will verify with the CPUC if a Tier 3 engine is not available per proper documentation, and a Tier 2 or Tier 1 engine must be used.
MM AQ-1: Construction Emission Reduction Measures	Yes	SCE shall submit to CPUC staff and/or construction monitors a copy of each piece of construction equipment's certified tier specification, BACT documentation, and/or CARB or SCAQMD operating permit, as applicable, at least 15 days prior to mobilization of each applicable unit of equipment.

MM AQ-2: Volatile Organic Compounds Credits	Yes	SCE has purchased and submitted documentation of the required ETC to the SCAQMD, and SCE will submit the results of the monitoring plan tracking to CPUC staff. If monthly reports indicate that too few credits have been purchased to compensate for ROG emissions after implementation of all applicable mitigation measures, SCE shall purchase additional ROG credits within 6 months of the end of construction. SCE shall submit proof of the purchase of credits within 7 months of the end of construction.
MM AQ-3: Measures to Reduce NO_X Emissions	Yes	Prior to construction, SCE will submit proposed additional measures to reduce daily emissions of NO_X to CPUC staff for review and approval, with the measures implemented depending on the amount of Tier III and Tier IV engines available at the time of construction.
MM AQ-4: Mitigation Agreement for Purchase of Oxides of Nitrogen (NO_X) Credits	Yes	Twenty days prior to the start of project construction, SCE shall provide CPUC staff with an estimate of the total construction-related NO_X emissions. The NO_X emission credits shall be purchased and submitted to CPUC prior to the start of project construction. SCE shall submit results of monitoring plan tracking to CPUC on a monthly basis. SCE shall submit proof of the additional credits purchased during construction, within 7 months of the end of construction.
Biological Resources		
APM-BIO-01: Special Status Plant Species	Yes	Prior to construction, SCE will conduct pre-construction surveys and mark special-status plants. During construction, SCE will avoid Nevin's barberry and special-status plants located during the preconstruction surveys.
APM-BIO-02: Revegetation Plan	Yes	Prior to construction, SCE will prepare a Revegetation Plan.
APM-BIO-03: Biological Monitoring	Yes	Biological monitors will be present when construction occurs in areas with special-status species, native vegetation, wildlife habitat, or unique resources.
APM-BIO-04: Coastal California Gnatcatcher Protection	Yes	Prior to construction, SCE will conduct pre-construction surveys. During construction, SCE will perform construction monitoring.
APM-BIO-05: Least Bell's Vireo Protection	No	Habitat is not present in the NTPR-1 footprint.

APM-BIO-06: Nesting Birds	Yes	Prior to construction, SCE will conduct pre-construction surveys. During construction, SCE will perform construction monitoring and establish buffer areas around active nests.
APM-BIO-07: Avian Protection	No	Implementation occurs prior to the start of construction.
APM-BIO-08: Compensation for Permanent Impacts	No	Implementation occurs following completion of construction.
MM BR-1: Pre-construction Surveys	Yes	SCE will conduct pre-construction surveys and clearance sweeps in all areas of temporary and permanent disturbance.
MM BR-2: Limits of Construction Activities: Project Boundaries and Sensitive Areas Clearly Marked	Yes	SCE will limit construction activities to approved work areas and access roads, and will indicate these areas with flagging, fencing, and/or signage.
MM BR-3: Habitat Restoration and Mitigation	Yes	During construction, SCE will minimize the removal of coastal sage scrub or other suitable coastal California gnatcatcher habitat.
MM BR-4: Noxious and Invasive Weed Control Plan	Yes	During construction, SCE will implement the Noxious and Invasive Weed Control Plan.
MM BR-5: Worker Environmental Awareness Program	Yes	WEAP training was approved by the CPUC on 4/7/2017. All project personnel will undergo WEAP training and sign-in sheets will be submitted to the CPUC with the monthly report.
MM BR-6: Avoidance of Nevin's barberry	No	No Nevin's barberry occurrences were observed within NTPR-1
MM BR-7: Restoration of Southern California Black Walnut	Yes	During construction, SCE will monitor construction activities that take place within the driplines of black walnut trees.
MM BR-8: Restoration of Special-status Plants	No	Implementation occurs following completion of construction.
MM BR-9: Construction Monitoring.	Yes	CPUC-approved biologist will be present during construction activities occurring near active nest areas, or within 100 feet of native vegetation or vegetation that has the potential, or is known, to provide habitat for special-status species.
MM BR-10: Open Trenches and Pipes	Yes	All steep-walled trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. Escape ramps will be used for open trenches only.
MM BR-11: Nesting Bird Management Plan	Yes	SCE will report nesting bird activities, buffer reductions, and monitoring results shall be provided to the USFWS, CDFW, and the CPUC on a regular basis.

MM BR-12: Gnatcatcher Surveys	Yes	During construction, SCE will perform monitoring and prepare monitoring reports.
MM BR-13: Pre-Construction Surveys for Least Bell's Vireo	No	Habitat is not present in the NTPR-1 footprint.
MM BR-14: Minimize Impact on Riparian Habitat and Aquatic Features	No	Implementation occurs prior to and following the completion of construction.
MM BR-15: Avian Protection Plan	Yes	During construction, SCE will implement the Avian Protection Plan.
Biological Opinion (BO) Conservation Measure (CM)-1: Onsite or Offsite Mitigation	Yes	SCE will provide mitigation per the BO requirements
CM-2: Habitat Restoration and Mitigation Plan	Yes	SCE will finalize and implement the Habitat Restoration and Mitigation Plan per these requirements
CM-3: Site Protection Document	Yes	SCE will preserve the mitigation site in perpetuity as documented in a site protection document
CM-4: Long-Term Management Plan	Yes	SCE will prepare a long-term management plan in accordance with the requirements of this measure.
CM-5: Funding for Long-Term Management	Yes	SCE will provide funding for attainment of the performance criteria of the Final HRMP and a non-wasting endowment for implementation of the LTMP.
CM-6: Non-Wasting Endowment	Yes	SCE will fund a non-wasting endowment in accordance with the requirements of this measure.
CM-7: New Substation Lighting	Yes	SCE will ensure that nighttime lighting associated with the new substation area will be directed away from the "Restricted Use Area".
CM-8: Gnatcatcher surveys	Yes	SCE will conduct at least three preconstruction surveys for coastal California gnatcatcher if Project activities will take place within the breeding and nesting season, in accordance with the conditions in this measure.
CM-9: Contractor Education Program	Yes	SCE has prepared and will provide contractor education in the form of a formal Worker Environmental Awareness Program (WEAP) in accordance with the requirements of this measure.
CM-10: Restricted Use Area	Yes	SCE will stake the Restricted Use Area per the requirement of this Plan prior to construction.
CM-11: Degradation of Vegetation Prevention	Yes	SCE will implement all of the conditions in this measure to prevent degradation of vegetation adjacent to temporary and permanent impact areas.

CM-12: Vegetation Removal in Gnatcatcher Habitat	Yes	SCE will ensure biological monitors are present during vegetation remove outside of the breeding season, and monitors will flush any resident gnatcatchers from work areas prior to vegetation removal. Reporting will also be conducted in accordance with the requirements in this measure.
CM-13: Monitoring After Vegetation Removal Outside of Breeding Season	Yes	SCE's monitors will conduct weekly inspections of gnatcatcher habitat and report non-compliance in accordance with the requirements in this measure.
CM-14: Monitoring After Vegetation Removal Outside within Breeding Season	Yes	Biological monitoring will occur within the breeding season whenever construction activities take place within 500 feet of remaining vegetated areas in accordance with the requirements in this measure.
CM-15: Monthly Summary Reports	Yes	SCE will provide monthly summary reports in accordance with the requirements in this measure.
CM-16: Routine Maintenance Restrictions	No	Routine maintenance will not occur during the time period of this NTPR.
CM-17: Telecommunications Routes Construction Schedule	Yes	Telecommunications Route 1 work is applicable to this NTPR and will occur outside the gnatcatcher breeding and nesting season, except with prior approval by the USFWS.
CM-18: Construction-Related Conservation Measures	Yes	SCE will comply with CMs 8 through 15.
CM-19: Noxious and Invasive Weed Control Plan	Yes	SCE has prepared and the CPUC has approved a Noxious and Invasive Weed Control Plan, which will be implemented during construction
CM-20: Temporary Impact Restoration	Yes	SCE will restore temporary impact areas in accordance with the requirements in this measure and the HRMP.
CM-21: Routine Maintenance	No	Routine maintenance will not occur during the time period of this NTPR.
CM-22: Least Bell's Vireo Surveys	No	No least Bell's vireo habitat is present within the NTPR-1 areas.
CM-23: Orientation Meetings	Yes	Orientation meetings will be held with construction personnel to review construction limits and measures that will be implemented to minimize impacts to federally-listed species.
CM-24: Riparian Area Conservation	Yes	SCE will ensure that its contractors comply with these measures, which are also consistent with measures in other permit conditions (e.g., Water Quality Certification, Streambed Alteration Agreement, etc.), within the patchy, disturbed riparian areas within the NTPR-1 areas.
CM-25: Riparian Vegetation Removal for Least Bell's Vireo Protection	No	No areas of riparian habitat potentially supporting least Bell's vireo is present within NTPR-1 areas.

CM-26: Telecommunications Route 3 Construction Schedule	No	No portions of the NTPR-1 areas are within Telecommunications Route 3.
CM-27: Monitoring Outside Vireo Breeding Season	No	No least Bell's vireo habitat is present within the NTPR-1 areas.
CM-28: Nevin's Barberry Protection	No	No Nevin's barberry is present within the NTPR-1 areas.
CM-29: Dust Suppression	Yes	SCE will implement dust suppression techniques consistent with the requirements of this measure.
CM-30: Nevin's barberry Preconstruction Surveys	No	No suitable habitat for Nevin's barberry is present within NTPR-1 area. Preconstruction surveys for Nevin's barberry have already been conducted for the entire Project area.
CM-31: Temporary Impact Restoration	Yes	SCE will restore temporary impact areas in accordance with the requirements in this measure and the HRMP.
Cultural and Paleontological Resources		
APM-CUL-01: Paleontological Resources Management Plan	Yes	During construction, SCE will implement the Paleontological Resources Management Plan.
MM CR-1: Flag and Avoid Known Unevaluated Historic Sites	Yes	Prior to construction, an archaeologist will erect flagging at appropriate locations.
MM CR-2: Worker Training for Cultural and Paleontological Resources	Yes	Prior to construction, all SCE, contractor, and subcontractor project personnel have received worker training for cultural and paleontological resources.
MM CR-3: Previously Unidentified Cultural Resources	If found	Work will be halted and protective barriers will be installed. A Data Recovery Field Memo will be prepared and a Data Recovery Report will be prepared and submitted to CPUC for review and approval. All impacted known resources and all unanticipated resources shall be recorded on DPR 523 forms that shall be filed at the Eastern Information Center with the Data Recovery Report. If an Evaluation Plan is needed, it will be prepared with appropriate measures.
MM CR-4: Paleontological Resources Monitoring	Yes	During construction, a qualified paleontologist shall monitor all ground-disturbing activities that take place within areas that have a moderate to high potential to contain paleontological resources.

MM CR-5: Follow Paleontological Resource Discovery Protocol	If found and unavoidable	Work will be halted. If the resource cannot be avoided and may be subject to further impact, the paleontologist shall determine whether the resource is unique under Part V of CEQA Guidelines Appendix G. Substantiation of the uniqueness conclusion shall be provided to the CPUC for review and approval. If the resource is determined not to be unique, work may commence in the area. If the resource is unique, then work shall remain stopped, and the approved paleontologist shall consult with the applicant and the CPUC regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA.
MM CR-6: Unanticipated Discovery of Human Remains	If found	In the event that human remains are identified, the CPUC, the CPUC-approved cultural resources specialist/archaeologist, SCE, and any other appropriate agency shall be immediately notified. SCE shall immediately contact the medical examiner at the Los Angeles County Coroner's Office.
Geology, Soils, and Minerals		
MM GEO-1: Geotechnical Investigation	No	Implementation occurs prior to the start of construction.
Hazards and Hazardous Materials		
MM HZ-1: Hazardous Materials Business Plan	Yes	SCE will submit a receipt, showing that Los Angeles Certified Unified Program Agency received the plan will be submitted to the CPUC no less than 15 days prior to storage of covered hazardous materials.
MM HZ-2: Hazardous Materials Training	Yes	Prior to construction, SCE will prepare and administer Hazardous Materials Training, and will maintain records documenting attendees at each training.
MM HZ-3: Spill Prevention, Control, and Countermeasure Plan	If thresholds met	If transformer oil is delivered to the project site, SCE shall prepare a site-specific Spill Prevention, Control, and Countermeasure Plan.
MM HZ-4: Contaminated Soil Contingency Plan	Yes	During construction, SCE will implement the Contaminated Soil Contingency Plan.
MM HZ-5: Well Management Plan	No	Implementation occurs prior to the start of construction.
Hydrology and Water Quality		
MM HY-1: Stormwater Pollution Prevention Plan	Yes	During construction, SCE will implement the Stormwater Pollution Prevention Plan
MM HY-2: Compliance with WDRs	Yes	During construction, all work within waters of the state will be conducted in conformance with the WDRs, and appropriate mitigation measures will be implemented in accordance with the WDRs.

MM HY-3: Construction Drainage Plan	Yes	During construction, SCE will implement the Construction Drainage Plan.
MM HY-4: Detention Basin Design	No	Implementation occurs prior to the start of construction.
MM HY-5: Dam Failure Evacuation Training	Yes	Prior to the start of construction, SCE shall train all construction workers located in the dam inundation areas of the Garvey Reservoir south dam, Eaton Canyon Dam, Garvey Reservoir north dam, and Santa Fe Dam on evacuation routes in the event of dam failure prior to construction of the project.
Noise and Vibration		
MM NV-1: Noise Control Plan	Yes	During construction, SCE will implement the Noise Control Plan.
MM NV-2: Operational Substation Noise Monitoring	No	Implementation occurs following the completion of construction.
MM NV-3: Noise from Helicopter Operations	No	Helicopters will not be used for activities covered under NTPR-1.
MM NV-4: Positioning of Helicopter Landing and Takeoff Areas	No	Helicopters will not be used for activities covered under NTPR-1.
MM NV-5: Noise Notification and Coordination for Whittier Narrows Natural Area	No	Whittier Narrows Natural Area is not included in activities covered under NTPR-1.
Public Services and Utilities		
MM PS-1: Relocation Agreement with Metropolitan Water District	No	Implementation occurs prior to the start of construction.
Traffic and Transportation		
MM TT-1: Traffic Control Plan	Yes	During construction, SCE will implement the Traffic Control Plan.
MM TT-2: Helicopter Lift Plan	No	Helicopters will not be used for activities covered under NTPR-1.
MM TT-3: FAA No-Hazard Determination	No	Implementation occurs prior to the start of construction.
MM TT-4: Pasadena City College Community Education Center Parking	No	Pasadena City College Community Education Center parking is not included in activities covered under NTPR-1.

11.0 Figures[16]

[16] October 2017: Figure 4 has been updated for Revision 1 to reflect updates to vegetation removals, but staging yards have not changed. Figure 7 has been updated for Revision 1 to reflect the increase from 12 to 16 temporary wood poles.

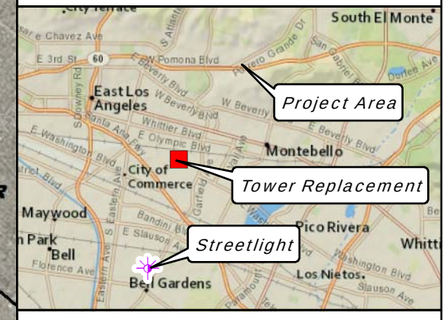
MESA 500KV SUBSTATION

NTPR #1

FIGURE 1: PROJECT LOCATION

Legend

- Proposed Lattice Steel Tower
- New Street Light
- Potential Disturbance Areas
- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary
- City Boundary



0 1,150 2,300 4,600 Feet

1 in = 3,000 feet

Date: 7/31/2017
File Name: Mesa_NTPR1_Fig1_ProjectMap_20170731.mxd
Version #: 1
Created By: J. Le
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MESA 500KV SUBSTATION

NTPR #1

FIGURE 2: MESA SUBSTATION and ASSOCIATED ROUTES

Legend

Transmission 220kv Structures
- Remove Lattice Steel Tower
- Proposed Lattice Steel Tower

Transmission 220kv Conductors
- Remove
- Proposed
- Temporary

Subtransmission 66kv Conductors
- Proposed
- Temporary
- Remove

Distribution 16kv Conductors
- Proposed Underground
- Reconductor Underground
- Remove Overhead
- Remove Underground

Telecommunication Fiber Lines
- Proposed, UG (Install New Conduit)
- Proposed, UG (Existing Conduit)
- Removal of Skywrap

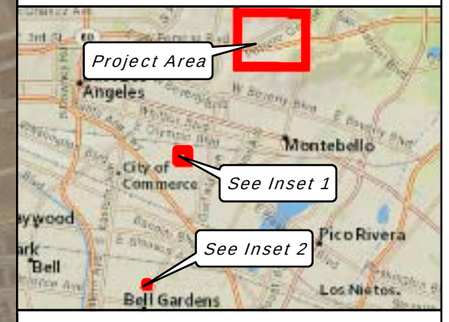
Substation Areas
- Senior MEER Building
- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary

Inset 1:
City of Commerce
Replace Tower

M2-T1
2501
Corvette St
Saybrook Ave
bing

Inset 2:
City of Bell Gardens
Street Lights

Loveland St
bing



0 190 380 760 Feet

1 in = 500 feet

Date: 7/31/2017
File Name: Mesa_NTPR1_Fig2_MesaAssocRoutes_20170731.mxd
Version #: 1
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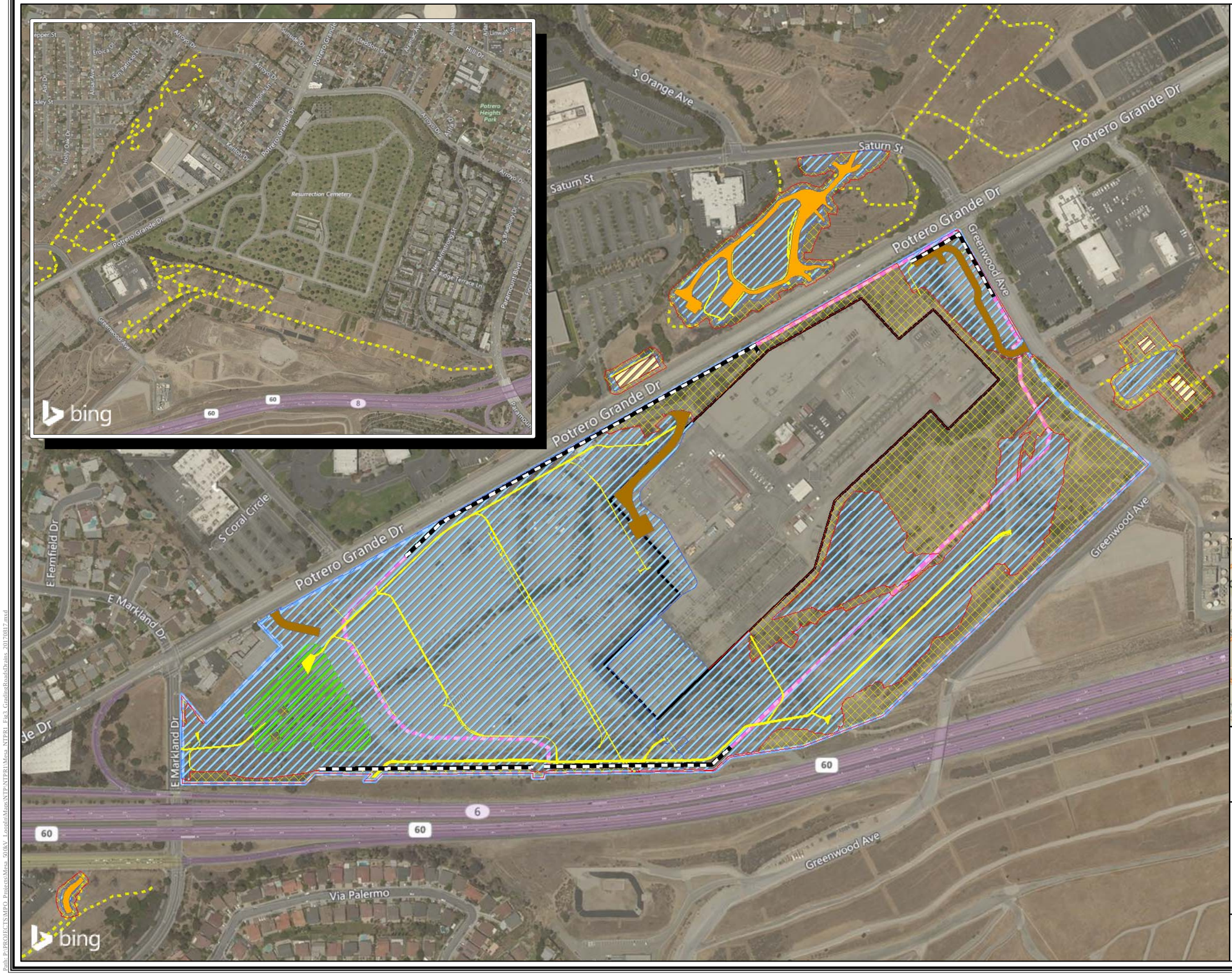
MESA 500KV SUBSTATION

NTPR #1

FIGURE 3: GRADING, ACCESS ROADS and DRAINAGES



Legend

- Retaining Wall
- Proposed Drainage

Civil Access Road Areas

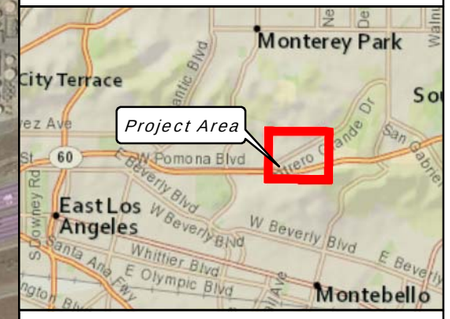
- Temporary, Driveway
- Permanent, Access Road

Civil Work Areas

- Grading Finish Grade
- Temporary Work Limits
- Temporary Grading (Crane Pads)
- Existing Access Roads

Substation Area

- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary
- Proposed Detention Basin



0 135 270 540 Feet

1 in = 350 feet

Date: 8/17/2017
File Name: Mesa_NTPR1_Fig3_GradingRoadsDrains_20170817.mxd
Version #: 1
Created By: J. Le
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MESA 500KV SUBSTATION

NTPR #1

FIGURE 4: STAGING YARDS and VEGETATION REMOVAL

Legend

Vegetation Removal

Substation Area

Property Boundary

Proposed Substation Boundary

Existing Substation Boundary

Construction Staging Yard

0 210 420 840 Feet

1 in = 550 feet

Date: 10/12/2017
File Name: Mesa_NTPR1_Fig4_StagingVegRemoval_20171012.mxd
Version #: 1
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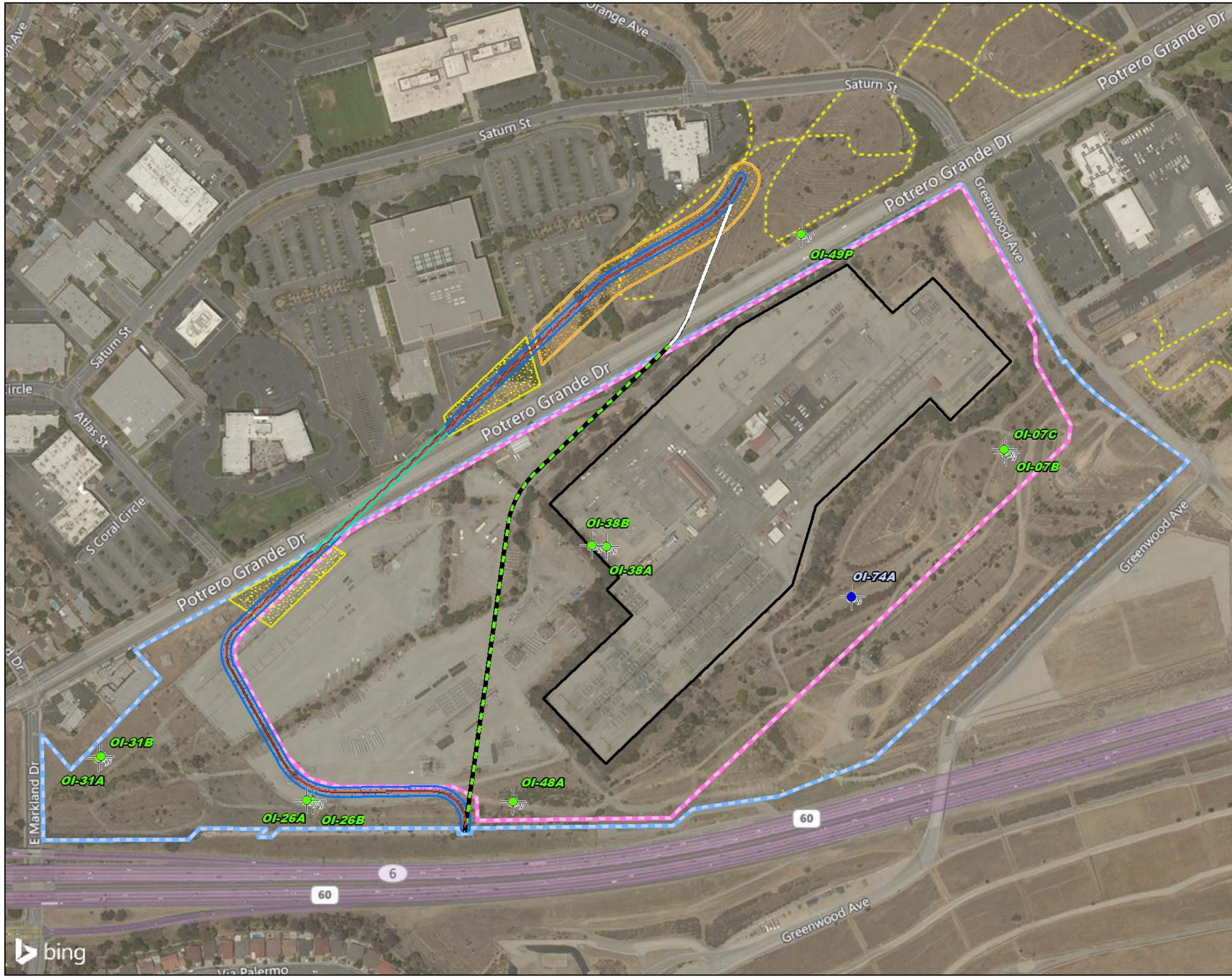
MESA 500KV SUBSTATION

NTPR #1

FIGURE 5: MWD WATERLINE RELOCATION AND GROUNDWATER MONITORING WELL REMOVAL



Legend

Existing Access Roads

Operating Industries, Incorporated (OII)

Remove, Well

Remove/Replace, Well

MWD Waterline

Abandon, Waterline

Proposed, Water Pipe C/L

Remove, Waterline

Construction Areas

Jack and Bore

Trench

Bore Pit

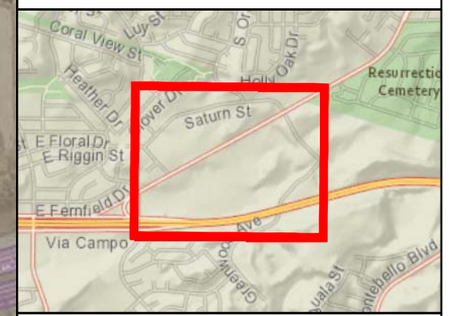
General Disturbance

Substation Area

Property Boundary

Proposed Substation Boundary

Existing Substation Boundary



0 115 230 460 Feet

1 in = 300 feet

Date: 8/3/2017
File Name: Mesa_NTPR1_Fig5_Utilities_20170802.mxd
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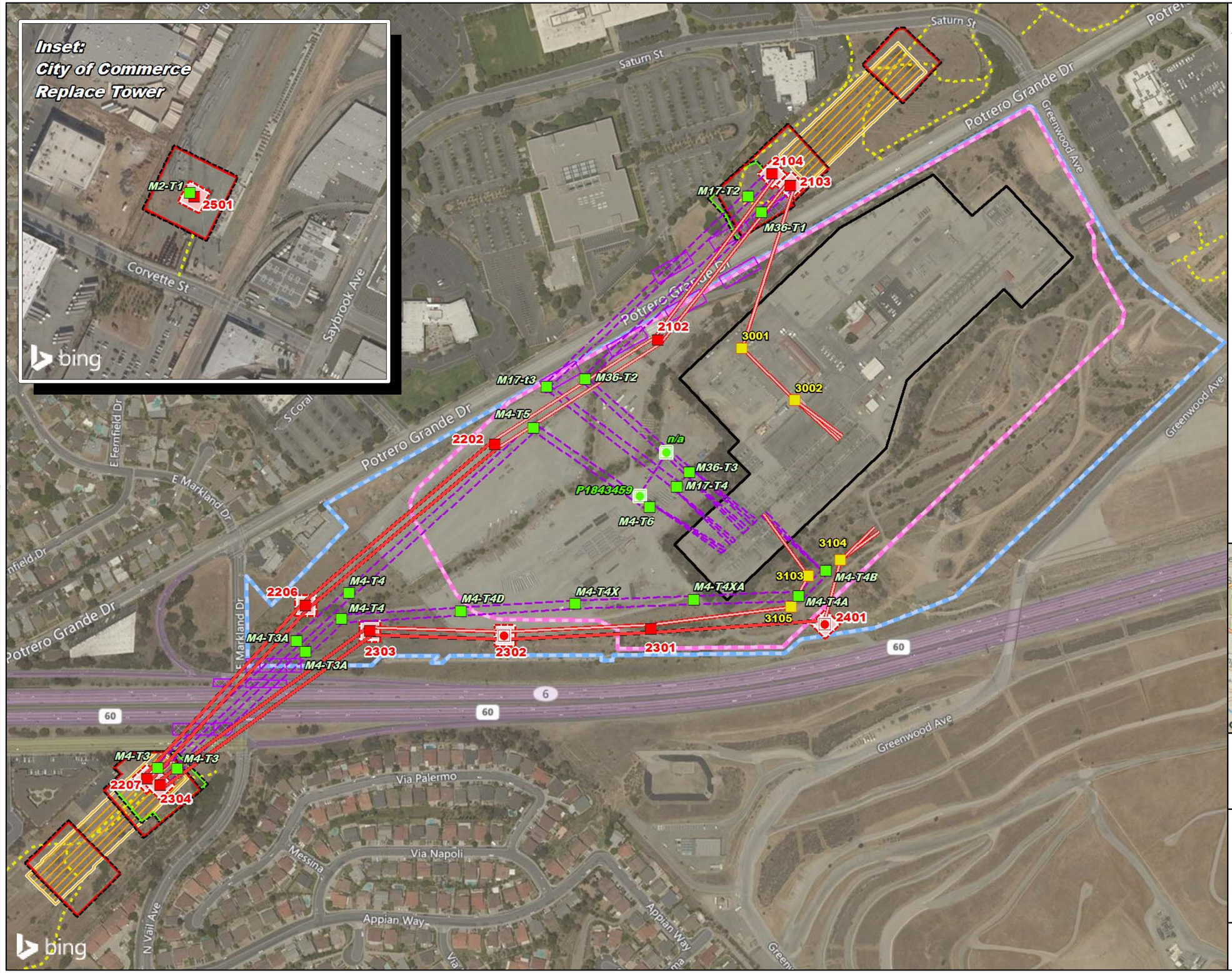
MESA 500KV SUBSTATION

NTPR #1

FIGURE 6: TRANSMISSION LINE RELOCATIONS



Legend

- Existing Access Roads

Structures

- Proposed Lattice Steel Tower
- Proposed Tubular Steel Pole
- Remove Lattice Steel Tower
- Remove Tubular Steel Pole
- Temporary Emergency Steel Pole

Conductors

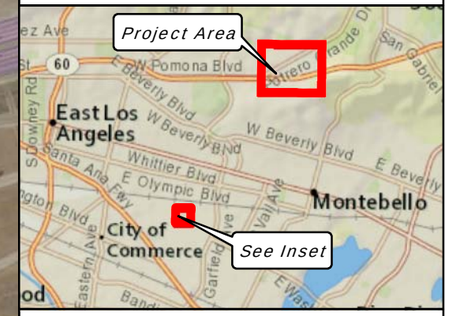
- Remove
- Proposed
- Temporary

Construction Areas

- Permanent O&M
- Demo Site
- Construction Work Site
- Guard Structure
- Wire Setup

Substation Area

- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary



0 135 270 540 Feet

1 in = 350 feet

Date: 8/3/2017
File Name: Mesa_NTPR1_Fig6_Trans_20170802.mxd
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MESA 500KV SUBSTATION

NTPR #1

FIGURE 7: SUBTRANSMISSION LINE RELOCATIONS

Legend

- Existing Access Roads

Structures

- Existing to Remain, LST
- Existing to Remain, Wood
- Proposed, LWS
- Proposed, TSP
- Remove, LST
- Temporary, Wood Poles

Conductors

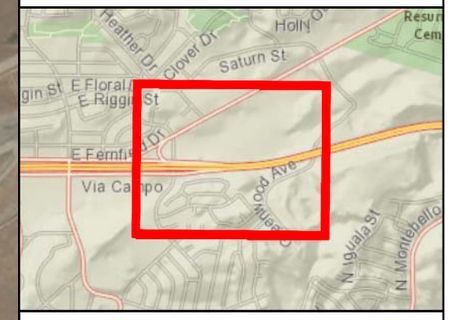
- Existing
- Proposed
- Temporary
- Remove

Construction Areas

- Construction Work Site
- Demo Site
- Guard Structure
- Permanent O&M
- Wire Setup

Substation Area

- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary



0 105 210 420 Feet

1 in = 300 feet

Date: 10/10/2017
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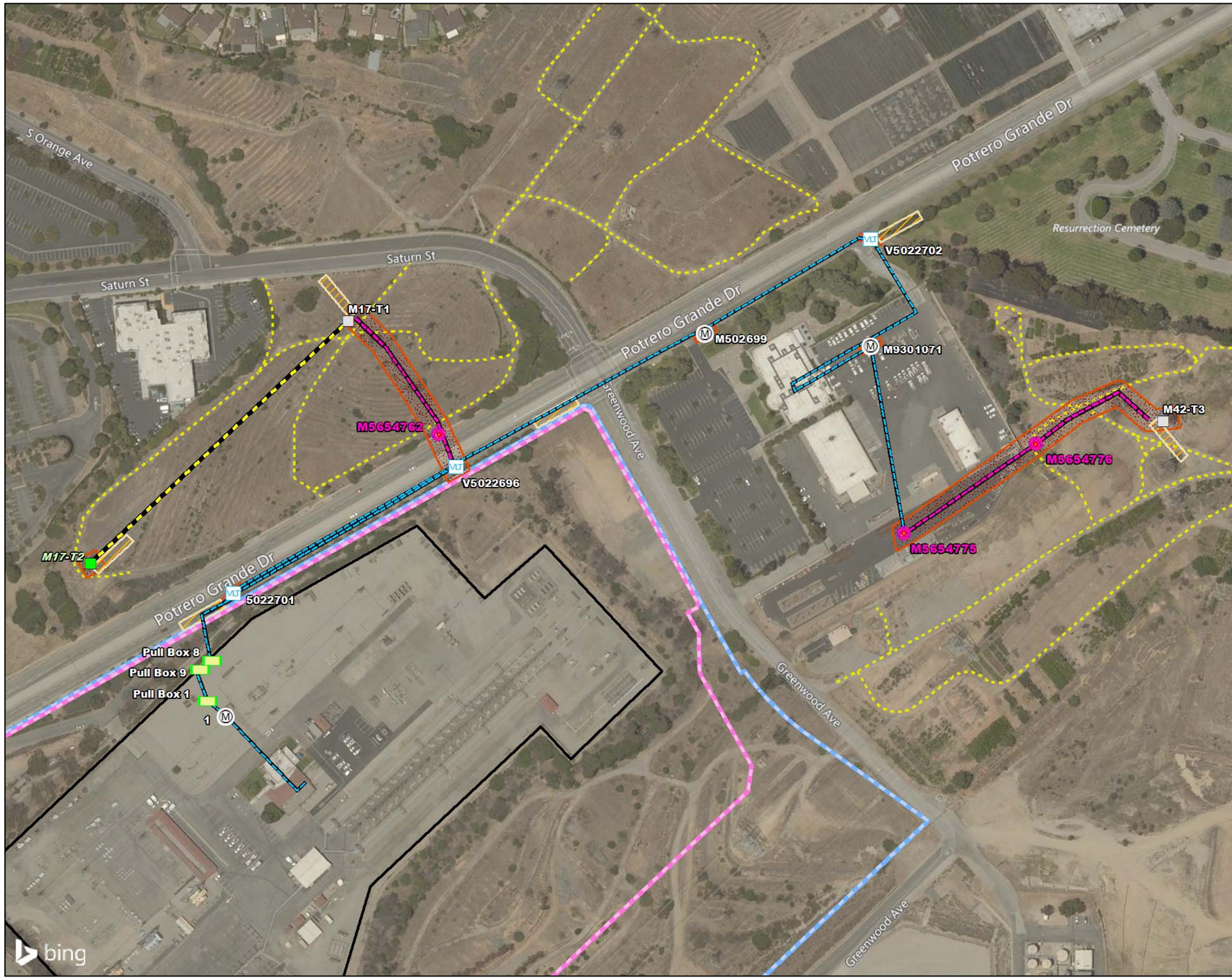
MESA 500KV SUBSTATION

NTPR #1

FIGURE 8: TELECOMMUNICATION LINE RELOCATIONS



Legend

- Existing Access Roads

Structures

- Existing, Manhole
- Existing, Pull Box
- Existing, Vault
- Proposed, Manhole
- Existing/Remain Lattice Steel Tower
- Remove Lattice Steel Tower

Conduits

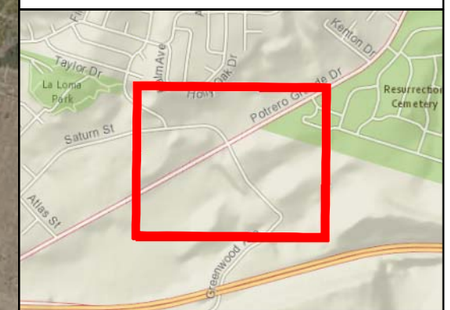
- Proposed, UG (Install New Conduit)
- Proposed, UG (Existing Conduit)
- Removal of Skywrap

Construction Areas

- Permanent O&M
- Wire Setup
- General Disturbance Area

Substation Area

- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary



0 75 150 300 Feet

1 in = 200 feet

Date: 8/3/2017
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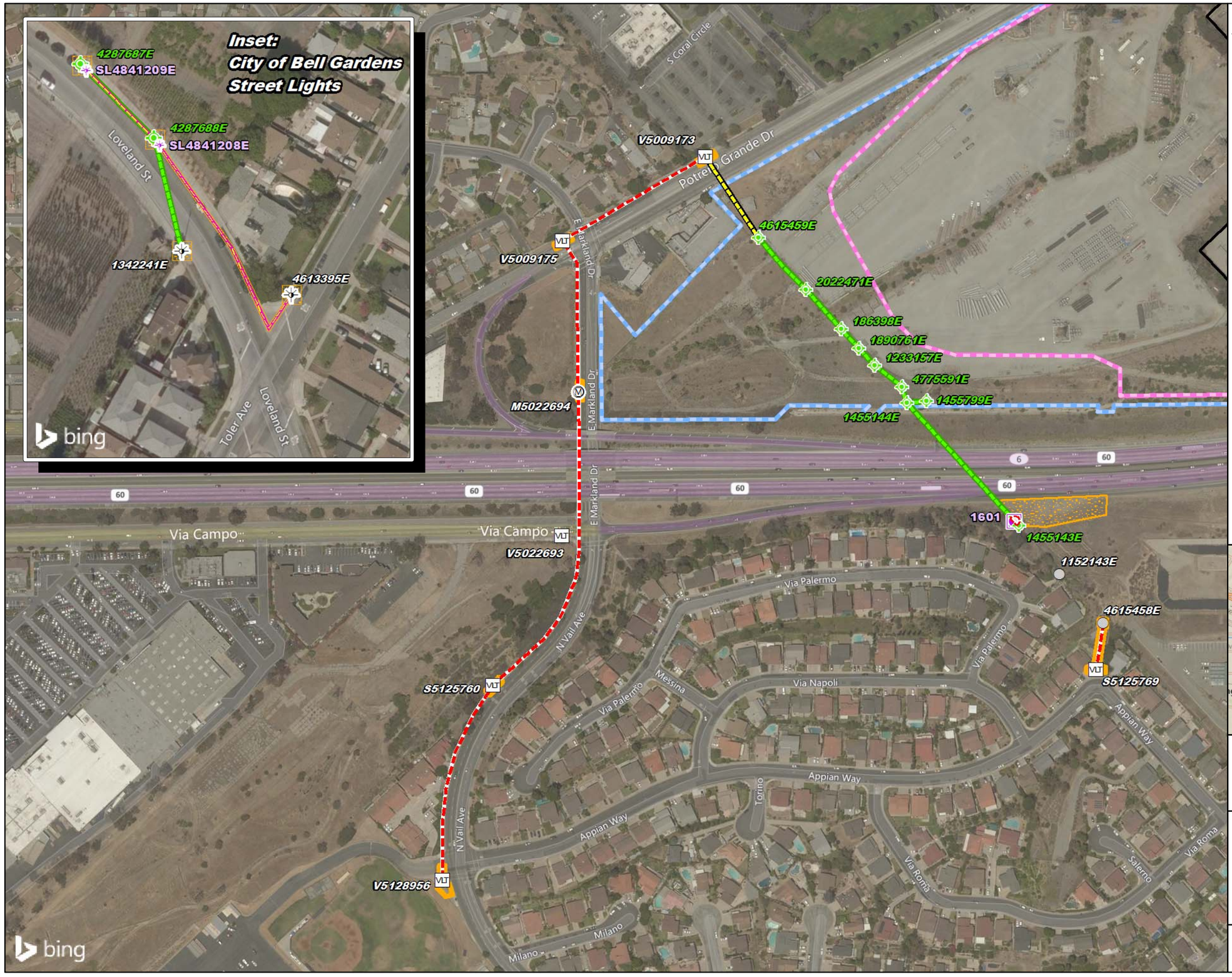
MESA 500KV SUBSTATION

NTPR #1

FIGURE 9 : DISTRIBUTION LINE RELOCATIONS



Legend

Structures

- New, Street Light
- Remove, Wood Pole
- Existing, Manholes
- Existing, Poles
- Existing, Street Light
- Existing, Vaults
- Proposed, TSP

Conductors

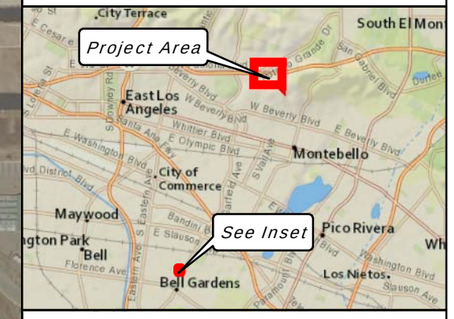
- Proposed, UG
- Reconductor, UG
- Remove, OH
- Remove, UG

Construction Areas

- Permanent O&M
- General Disturbance Area

Substation Area

- Property Boundary
- Proposed Substation Boundary
- Existing Substation Boundary



0 95 190 380 Feet

1 in = 250 feet

Date: 7/31/2017
File Name: Mesa_NTPR1_Fig9_Distribution_20170731.mxd
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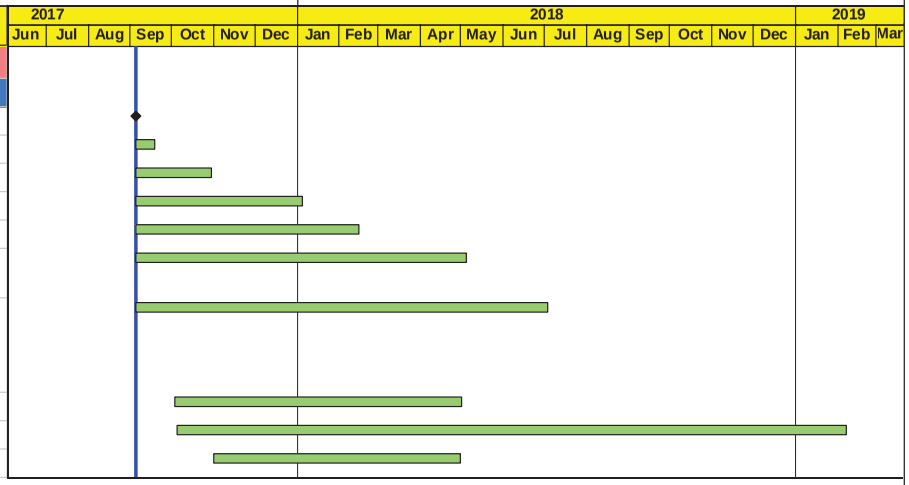
Mesa Substation
NTPR #1 Construction Schedule
Figure 10

Activity ID	Activity Name	Start	Finish
Mesa Construction High Level Schedule		05-Sep-17	07-Feb-19
NTPR # 1 Construction Plan		05-Sep-17	07-Feb-19
MSNTPR1-010	Mesa Substation Construction Start	05-Sep-17	
MSNTPR1-112	Oil Well Removal	05-Sep-17	18-Sep-17
MSNTPR1-015	Temporary Fencing	05-Sep-17	30-Oct-17
MSNTPR1-020	Veg Removal	05-Sep-17	04-Jan-18
MSNTPR1-121	MWD Waterline Relocation	05-Sep-17	15-Feb-18
MSNTPR1-123	Transmission, Sub-transmission, Distribution, and Telecommunications, Line Relocations	05-Sep-17	04-May-18
MSNTPR1-125	Modify Existing SS: Remove of Capacitors, Install New Conduit Paths, Rebuild Position in the Existing 220kV Switch Rack	05-Sep-17	03-Jul-18
MSNTPR1-165	Construction of the MEER	03-Oct-17	01-May-18
MSNTPR1-175	Grading and Storm Drain Installation	05-Oct-17	07-Feb-19
MSNTPR1-178	Retaining Walls	01-Nov-17*	30-Apr-18



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Appendix A

Mitigation Monitoring Compliance and Reporting Plan – Mesa Substation Project – Various Project Elements

Mitigation Monitoring, Compliance, and Reporting Program

Mesa 500-kV Substation Project

Version 1

August 2017

Prepared by Ecology and Environment, Inc. for:
State of California
Public Utilities Commission

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Acronyms and Abbreviations

APLIC	Aviation Power Line Interaction Committee
APM	applicant proposed measures
BMP	Best Management Practices
BACT	best available control technology
CA MUTCD	California Manual on Uniform Traffic Control Devices
Cal-OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CD	Compliance Director
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERS	California Environmental Reporting System
CFR	Code of Federal Regulations
CIP	Critical Infrastructure Protection
CM	Compliance Manager
CPM	Consultant Project Manager
CPUC	California Public Utilities Commission
CWA	Clean Water Act
dBA	A-weighted decibels
DPR	California Department of Parks and Recreation
E & E	Ecology & Environment, Inc.
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
EPM	Environmental Project Manager
ETC	Emission Trading Credit
FAA	Federal Aviation Administration
HMBP	Hazardous Materials Business Plan
hp	horsepower
KOP	key observation point
kV	kilovolt
LACPDW	Los Angeles County Department of Public Works
L_{eq}	equivalent sound level
LSAA	Lake or Streambed Alteration Agreement
LST	lattice steel tower
MBTA	Migratory Bird Treaty Act
MLD	most likely descendent

MM	mitigation measure
MMCRP	Mitigation Monitoring, Compliance, and Reporting Program
MMRP	Mitigation Monitoring and Reporting Plan
MPC	Minor Project Change
MSERC	Mobile Source Emission Reduction Credit
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NERC	North American Electric Reliability Corporation
NO_X	oxides of nitrogen
NTP	Notice to Proceed
OII	Operating Industries Incorporated
OSHA	Occupational Safety and Health Administration
PFM	Petition for Modification
PM	Project Manager
project	Mesa 500-kV Substation Project
PRC	Public Resources Code
PTC	Permit to Construct
ROG	reactive organic gas
ROW	Right-of-way
RTC	Regional Clean Air Incentive Market Trading Credit
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SCAQMD	Southern California Air Quality Management District
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TRTP	Tehachapi Renewable Transmission Project
TSP	tubular steel pole
USACE	U.S. Army Corp of Engineers
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program

1 Introduction

The California Public Utilities Commission (CPUC) approved a Permit to Construct (PTC) the Mesa 500-kV Substation Project (referred to herein as "the project") on February 9, 2017. As part of this action, the CPUC certified the Final Environmental Impact Report (EIR) for the project and adopted the Mitigation Monitoring and Reporting Plan presented in Chapter 8 of the Final EIR, which includes procedures for preparing and implementing the Mitigation Monitoring, Compliance, and Reporting Program (MMCRP). This document, referred to as the MMCRP, serves as a working guide to maintain environmental compliance for the project and includes specific protocols, guidelines, and standard procedures for environmental compliance to be followed prior to and during project construction.

1.1 Project Overview

The construction of the project will upgrade the existing 220/66/16-kV Mesa Substation to a 500/220/66/16-kilovolt (kV) substation. The construction would primarily occur at the substation site in the City of Monterey Park, with additional components located in other cities such as Montebello, Rosemead, South El Monte, Commerce, Bell Garden, and Pasadena in Los Angeles County, California, as well as in portions of unincorporated Los Angeles County.

As part of the project, and as described in the Final EIR, Southern California Edison (SCE) will perform the following actions:

- Construction of the proposed 500/220/66/16-kV Mesa Substation within an 86.2-acre site in the City of Monterey Park, California; demolition of the existing 220/66/16-kV Mesa Substation (currently occupying 21.6 acres of the site); relocation of a portion of an existing 72-inch Metropolitan Water District of Southern California waterline that traverses the same substation site; and decommissioning of 10 existing groundwater monitoring wells located within the substation site that are currently administered by the U.S. Environmental Protection Agency.
- Removal, relocation, modification, and/or construction of transmission, subtransmission, distribution, and telecommunication structure to accommodate the new 500/220/66/16-kV Mesa Substation within existing applicant-owned properties, rights-of-way (ROWs), and franchise areas located in the cities of Monterey Park, Montebello, Rosemead, South El Monte, and Commerce, and in portions of unincorporated Los Angeles County.
- Installation of a temporary 220-kV transmission structure to connect the Eagle Rock-Mesa 220-kV Transmission Line to Goodrich Substation and maintain a second line of service to the City of Pasadena.
- Replacement of an existing 220-kV double-circuit transmission structure supporting the existing Goodrich-Laguna Bell (future Laguna Bell-Mesa No. 1) and Mesa-Redondo 220-kV Transmission Lines to increase the capacity rating of the future Laguna Bell-Mesa No. 1 220-kV Transmission Line.
- Conversion from overhead to underground of three spans of existing street light conductors within the City of Bell Gardens.
- Minor internal modifications (equipment replacement and upgrades) within the perimeter of 27 existing substations operated by the applicant within the applicant's service area.

1.2 Mitigation Monitoring, Compliance, and Reporting Program

1.2.1 Authority

Pursuant to Public Resources Code section 21002.1(b), one of the CPUC's functions as Lead Agency is to mitigate and/or avoid the significant effects on the environment of projects it approves. This includes ensuring the mitigation measures it adopts are effective, enforceable, and are being implemented. Under California Environmental Quality Act (CEQA) Guidelines Section 15097, the CPUC as Lead Agency is responsible for ensuring that implementation of the mitigation measures and SCE's applicant proposed measures (APMs) occurs in accordance with the mitigation monitoring and reporting plan (MMRP) the CPUC adopted in its Final Decision on February 9, 2017. To fulfill its obligations, the CPUC is responsible for interpreting the mitigation measures and APMs to determine whether they are being implemented effectively.

The CPUC may conduct a comprehensive review to determine whether there are conditions that are not effectively mitigating impacts at any time it deems appropriate, including as a result of the Dispute Resolution procedure outlined in Section 3.1.5. If the CPUC determines that, based on the review, any conditions are not adequately mitigating significant environmental impacts caused by the project, the Energy Division may specify appropriate means and methods to ensure that the mitigation is being effectively implemented. These reviews will be conducted in a manner consistent with the CPUC's rules and practices.

The CPUC has additional authority under the Public Utilities Code. Consistent with the CPUC's rules and practices, including Public Utilities Code section 768, the CPUC may require the performance of any other act that the health or safety of its employees, passengers, customers, or the public may demand. Pursuant to Public Utilities Code sections 314 and 582, the CPUC may require documentation or copies of permits issued by other agencies.

1.2.2 Purpose

This MMCRP includes provisions for monitoring and reporting. Monitoring refers to the ongoing or periodic process by which project construction and operation are overseen by the Lead Agency; in the case of the project, monitoring will ensure that SCE's compliance with project conditions is checked on a regular basis. Reporting, which comprises written reviews of SCE's compliance with APMs and mitigation measures presented to the decision-making body or a designated staff person, ensures that the Lead Agency is informed of SCE's compliance with APMs and mitigation measures. The CEQA Guidelines encourage lead and responsible agencies to cooperate in mitigation monitoring and reporting, where possible.

The MMCRP was prepared consistent with the framework in Chapter 8 of the Final EIR, Public Resources Code (PRC) section 21081.6, and CEQA Guidelines section 15097. The MMCRP will be implemented until the final monitoring and reporting procedures identified in the following sections have been completed to the CPUC's satisfaction.

The purpose of the MMCRP is to:

- Ensure effective implementation of the APMs and mitigation measures adopted by the CPUC;

- Facilitate the monitoring, compliance, and reporting activities of the CPUC and its monitors;
- Establish lines of communication related to mitigation monitoring; and
- Provide a method of effectively documenting and reporting compliance with all APMs and mitigation measures.

Therefore, this MMCRP:

- Summarizes mitigation measures and APMs and their monitoring and reporting requirements, as identified in the Final EIR;
- Describes the process by which environmental monitors designated by CPUC Energy Division (Energy Division) staff will observe construction of the project to ensure implementation of each APM and mitigation measure; and
- Describes the process for recording "non-compliance" (i.e., evidence that SCE is not fully implementing each applicable APM and mitigation measure).

The MMCRP was developed to provide guidelines and standardize procedures for environmental compliance on the project. These procedures have been developed by the CPUC, in coordination with SCE and other responsible agencies, to help define reporting relationships, provide detailed information about the roles and responsibilities of the project's environmental compliance team members, define compliance reporting procedures, and establish communication protocol. Throughout the course of project construction, the protocols, guidelines, procedures, communication lists, and schedules presented in the MMCRP may be revised as needed to address specific day-to-day realities of project construction.

1.2.3 Implementation

Implementation of the MMCRP begins during pre-construction and continues through post-construction. MMCRP implementation will cease when the CPUC concludes there is no further need for CPUC monitoring of the project. SCE must perform post-construction monitoring for the project, as applicable, and in accordance with mitigation measure and APM requirements as described in the Final EIR. Post-construction monitoring and MMCRP implementation will continue until compliance with post-construction requirements (i.e., revegetation) has been met.

1.2.4 Program Scope

1.2.4.1 CEQA Mitigation

The project is subject to APMs and mitigation measures in the Final EIR, which are collectively referred to as "CEQA mitigation." These are listed in Table 5-1 in Section 5 of this MMCRP. To the extent CEQA mitigation expressly relies on, includes, or references permits or approvals from other federal, state, and local agencies, all terms and conditions of such permits or approvals are considered incorporated into the scope of the CEQA mitigation.

1.2.4.2 Other Permits and Authorizations

In addition to the CPUC, other federal, state, and local agencies have jurisdiction over resources in the project area. Potentially applicable permits for the project were addressed in the Final EIR Project Description and are listed in Table 1-1, below. SCE must obtain permits and/or agency authorizations from various federal, state, and local agencies. Table 1-2 lists contact information for permitting agencies associated with the project.

Table 1-1 Potential Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
Federal		
United States Army Corps of Engineers (USACE)	Work within Waters of the United States, including wetlands	Consultation with the USACE, Regional Water Quality Control Board, California Department of Fish and Wildlife, and USFWS for a Clean Water Act Section 404 permit. Requires Section 408 consultation.
United States Fish and Wildlife Service (USFWS)	Threatened or endangered species and conservation plans	Take authorization (if required) and consultation with the USFWS. Consultation for Section 7 or 10 of the Federal Endangered Species Act.
Federal Aviation Administration	Aircraft operation and safety in United States air space	Consultation to determine whether Congested Area Plan approval for helicopter external-load operations is required. Consultation to ensure compliance with Federal Aviation Regulations Part 77 (Objects Affecting Navigable Airspace).
State		
California Public Utilities Commission	California Environmental Quality Act review and overall approval of the proposed project	Permit to Construct for construction of electric subtransmission line facilities designed for operation at 66 kilovolts.
California Department of Fish and Wildlife	Threatened or endangered species and conservation plans	Take authorization (if required) and consultation with the USFWS. Consultation for Section 2081 of the California Endangered Species Act. Consultation for Section 1600 of the California Fish and Game Code (streambed alteration agreement).
California Department of Transportation (Caltrans)	Acts on behalf of the Federal Department of Transportation pursuant to California Streets and Highways Code 660 to 711.21 and California Code of Regulations 1411.1 to 1411.6.	Caltrans requires that all work done within, under, or above a state or interstate highway right-of-way obtain an encroachment permit. A Transportation Permit required for oversize and/or overweight truck loads that exceed the limits of a legal load as defined by Division 15 of the California Vehicle Code. Modifications to state facilities must meet mandatory design standards and specifications.
California State Water Resources Control Board	Storm water discharges and Clean Water Act Section 401 permit	Notice of Intent to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order 2009-0009-DWQ as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ and Section 401 Permit associated with issuance of a Clean Water Act Section 404 Permit.

Table 1-1 Potential Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
State Historic Preservation Office, Native American Heritage Commission	Historic, cultural, and archaeological resources	Consultation regarding known cultural resources. Consultation regarding the listing of cultural or historic resources in the National Register of Historic Places or California Register of Historical Resources.
Regional and Local		
Los Angeles Regional Water Quality Control Board	National Pollutant Discharge Elimination System permitting	As directed by State Water Resources Control Board, monitor development and implementation of Storm Water Pollution Prevention Plans (SWPPPs) and other aspects of the National Pollutant Discharge Elimination System permit and 401 certification program. SWPPPs are required for storm water discharges associated with construction activities that disturb more than 1 acre or more of land.
Metropolitan Water District of Southern California (MWD)	Public water pipelines	Approval to relocate water pipeline at proposed substation site. The pipeline is owned and operated by the MWD.
South Coast Air Quality Management District (SCAQMD)	Air pollution and greenhouse gas emissions including fugitive dust	Rule 403 Permit for fugitive dust. The potential use of stationary diesel generation and/or emergency fire pumps at the proposed Mesa Substation may require an SCAQMD permit.
Los Angeles County Department of Public Health. Environmental Health District Office (East County)	Installation/relocation of wastewater treatment and septic systems.	Sewer system installation permit required for the new systems at the proposed Mesa Substation.
Los Angeles County Department of Public Works (LADPW)	Encroachment on road crossings, and other public rights-of-way (ROWs) (including excavation along ROW). Road closures.	Construction and Encroachment Permit. Joint Trench Utility Permit. Service Cut Permit.
Los Angeles County Department of Public Works	Protected trees, aqueduct crossings, and grading in unincorporated areas of Los Angeles County.	Permits required for tree removal and grading for access road or work areas required to install project components within Los Angeles County jurisdiction.
	Flood control channels/storm drains.	Encroachment permit.
City of Monterey Park Division of Building and Safety	All occupied buildings constructed within the proposed Mesa Substation site.	Permit required for construction of the proposed Mesa Substation and to erect steel structures. A demolition permit may be required for removal of existing structures at the current Mesa Substation site. Permit required for design of perimeter wall to ensure consistency with the surrounding community.
Cities of Monterey Park, Montebello, Commerce, Pasadena, and Bell Gardens	Construction activities in public ROW or easements, tree protection and grading within city limits.	Encroachment, tree removal, and grading permits.

Table 1-1 Potential Consultation and Permitting Requirements

Agency / Group	Jurisdiction	Consultation or Permit
City (other ministerial)	Flood control areas, temporary land occupancy, and staging areas, excavation, and after hours work.	Permits for crossing flood areas, temporary use/occupancy, excavation and shoring, and after hours work permits (if required).

Table 1-2 Contact Information for Permitting Agencies Associated with the Mesa Substation Project

Agency	Address	Contact Person	Phone	Email Address
Lead Agency				
CPUC	505 Van Ness Avenue San Francisco, CA 94102	Lisa Orsaba, Project Manager	(415) 703-1966	Lisa.orsaba@cpuc.ca.gov
Federal Agencies				
United States Army Corps of Engineers	915 Wilshire Blvd. Los Angeles, CA 90017	Pam Kostka, Regulatory Project Manager	(213) 452-3420	Pamela.K.Kostka@usace.army.mil
United States Fish and Wildlife Service	2177 Salk Avenue, Suite 250 Carlsbad, CA 92008	Christine Medak	(760) 431-9440 ext 298	christine_medak@fws.gov
Federal Aviation Administration		TBD	TBD	TBD
State Agencies				
California Department of Fish and Wildlife	4665 Lampson Ave, Suite C Los Alamitos, CA 90720	Steve Gibson	(562) 342-2106	Steve.gibson@wildlife.ca.gov
California Department of Transportation	California Dept of Transportation District 7 Office of Permits MS 9 100 South Main Street Suite 100 Los Angeles, CA 90012	Christine Song, P.E. Acting Chief Office of Permits	(213) 897-0954	
Los Angeles Regional Water Resources Control Board	320 West Fourth St Suite 200 Los Angeles, CA 90013	Valerie Carrillo Zara, P.G. Lead Section 401 Program	(213) 576-6759	Valerie.CarrilloZara@waterboards.ca.gov

Table 1-2 Contact Information for Permitting Agencies Associated with the Mesa Substation Project

Agency	Address	Contact Person	Phone	Email Address
Regional and Local				
Los Angeles Regional Water Quality Control Board	National Pollutant Discharge Elimination System permitting			

1.3 Construction Schedule

Table 1-3 contains an approximate schedule for the project.

Table 1-3 Approximate Construction Schedule

Construction Activity	Duration (months)	Estimated Schedule
Site grading, vegetation removal, and storm drain	14	September 2017
Waterline removal and installation	7	September 2017
Transmission, Sub-transmission, Distribution, and Telecommunications line relocations	9	September 2017
OII Well Removal	1	September 2017
Construction of the MEERs	8	October 2017
Operation building construction	16	December 2017
220kV substation construction	18	January 2018
220kV cutovers	12	May 2019
Sub-transmission construction 66kV	32	September 2017
Distribution construction	12	September 2017
Telecom/transtelecom construction	40	September 2017
500kV substation construction	19	September 2020

2 Roles and Responsibilities

This section describes specific SCE and CPUC roles and responsibilities for the project. SCE, as the project applicant, has the primary responsibility to ensure compliance with its aspects of the MMCRP and any other relevant local, state, or federal regulations or authorizations. SCE must obtain and comply with all other required permits and approvals. The CPUC is responsible for monitoring SCE's compliance by verifying that SCE has adequately implemented mitigation measures and APMs and that construction and operation activities are consistent with the Final EIR's project description.

2.1 SCE Roles and Responsibilities

SCE personnel and contractors are responsible for implementing all mitigation measures, APMs, permit conditions, and the MMCRP. This includes all terms and conditions in permits or approvals from other federal, state, and local agencies. SCE must comply with project requirements, plan construction activities in a way that meets project requirements, document compliance activities and mitigation results, and implement the MMCRP.

2.1.1 SCE Project Manager

Role and Responsibility. SCE's Project Manager (PM), Don Dow, is part of SCE's Major Projects Organization and will provide the overall direction, management, leadership, and corporate coordination for the project. Mr. Dow is responsible for the project construction schedule and for ensuring that the project is completed as required by project contract documents and conditions, including adopted APMs, mitigation measures, and agency permitting requirements. Mr. Dow will lead environmental compliance throughout the duration of construction for the project.

The SCE PM's responsibilities include, but are not limited to:

- Leading coordination among engineering, construction management, and environmental staff for SCE;
- Leading coordination between SCE staff and regulatory agencies to ensure that all agency requirements are met;
- Leading the integration of environmental responsibilities into all levels of project construction activities;
- Ensuring compliance with project APMs and mitigation measures, as well as any other project environmental policies, guidelines, and procedures;
- Ensuring that data, including work schedule, location, and critical issue information, are provided to members of the project construction team as needed; and
- Communicating project activities, schedules, and environmental and public relations issues to the project team as needed.

Reporting Relationship. The SCE PM reports to SCE's Major Projects Organization. The SCE PM gives direction to the SCE Environmental Project Manager (EPM), whose role is described below.

Communication. The SCE PM communicates with the SCE EPM and construction management team.

2.1.2 SCE Environmental Project Manager

Role and Responsibility. SCE's EPM, Lori Iles-Rangel, is responsible for providing the appropriate level of resources for successful environmental compliance. The SCE EPM communicates with the staff at the resource agencies and with the Energy Division PM and Compliance Manager (CM). The EPM is responsible for directing development and implementation of preconstruction environmental planning, permitting, and compliance activities; the environmental inspection and

preconstruction survey program; and the Worker Environmental Awareness Training Program. The EPM is also responsible for ensuring compliance with requirements in project permits, APMs, and mitigation measures. Ms. Iles-Rangel will be assisted by SCE's environmental consultant, ICF International, Inc. (ICF), and ICF's Consultant Project Manager (CPM), Mike Ireland. The SCE EPM is ultimately responsible for ensuring that SCE construction crews maintain compliance with all project permits, APMs, and mitigation measures. The SCE EPM is the primary compliance point of contact for SCE.

Reporting Relationship. The SCE EPM reports to the SCE PM and directs the work of SCE resource specialists and the ICF CPM.

Communication. The SCE EPM communicates with the resource agencies, all members of the project environmental compliance monitoring team, and the SCE PM. The SCE EPM also oversees all communication with SCE contractors and team members.

2.1.3 SCE Environmental Monitoring Team

SCE's environmental monitors are the primary field staff responsible for evaluating, documenting, and verifying compliance of construction activities with all applicable requirements. The environmental monitoring team for SCE will be led by SCE's environmental consultant's CPM under the direct supervision of SCE's EPM. The CPM will coordinate the activities of their environmental monitoring team, including biological, paleontological, and archaeological monitors (i.e., Specialty Monitors), to comply with each APM and mitigation measure. Each environmental monitor will work closely with construction personnel to ensure that preconstruction surveys are completed and APMs and mitigation measures are effectively implemented. Specialty Monitors will be assigned by SCE as needed and as required to protect sensitive biological, paleontological, and archaeological resources.

In addition to ensuring compliance during construction, SCE is required to provide updates to the CPUC CM and PM. These will be in the form of Weekly Status Updates and will include construction schedules for the upcoming week and monthly Environmental Compliance Reports that provide a summary of the past month's construction activities and any applicable environmental issues.

2.1.4 SCE Construction Supervisor

SCE will identify a construction supervisor prior to the start of construction. The construction supervisor will provide daily construction work schedules to on-site construction personnel and monitors and will describe the nature and extent of scheduled construction activities to ensure that adequate monitoring resources are provided. The construction supervisor will also ensure that construction schedules are provided to SCE's EPM so they in turn can provide those on a timely basis to the CPUC PM and CM (i.e., weekly on Monday morning). The construction supervisor will also report any spills (e.g., fuel or water) or deviations from compliance to the SCE CPM.

Key environmental responsibilities for the construction supervisor include, but are not limited to:

- In conjunction with the EPM, verifying that all construction workers attend the project environmental training program prior to beginning work;
- Reviewing and understanding the environmental requirements; and

- In conjunction with the EPM, implementing environmental protection requirements and conditions during construction and maintaining compliance with project requirements, including adopted APMs and mitigation measures, and all project permits.

2.2 CPUC Roles and Responsibilities

2.2.1 CPUC Project Manager

The CPUC PM, Lisa Orsaba, has overall responsibility for determining the effectiveness of compliance with environmental requirements based on the success criteria included for each APM and mitigation measure. The CPUC PM assigns monitoring and reporting responsibilities to a third-party contractor (Ecology and Environment, Inc.; E & E), as described below, and will oversee the work of the third-party contractor through review of monthly status reports. The CPUC PM will be notified of non-compliance situations and may be involved in the resolution of the issue(s). All requests for Minor Project Changes (MPCs) and Notices to Proceed (NTPs) will be submitted to the CPUC PM for review and approval. The CPUC PM will issue NTPs for construction of each phase of the project, as identified by SCE. The CPUC has the authority to halt any construction activity associated with the project if the activity is determined to be a serious deviation from the approved project or adopted APMs and mitigation measures. A construction halt or stop work order would follow the communication procedure outlined in Section 3.5.4.

2.2.2 CPUC Environmental Monitors

The CPUC's third-party contractor, E & E, will report to the CPUC PM and will conduct daily monitoring and reporting duties. The E & E Environmental Monitoring team will be led by the Compliance Director (CD), Elizabeth Hughes, and CM, Jenny Vick.

SCE's CPM has the primary responsibility for ensuring compliance with applicable mitigation measures and APMs. The CPUC Environmental Monitors ensure and document compliance achievement. Compliance is documented through site inspection forms, mitigation measure and APM tracking, and weekly and monthly reports to the CPUC PM. The following Environmental Monitors will be involved in the project:

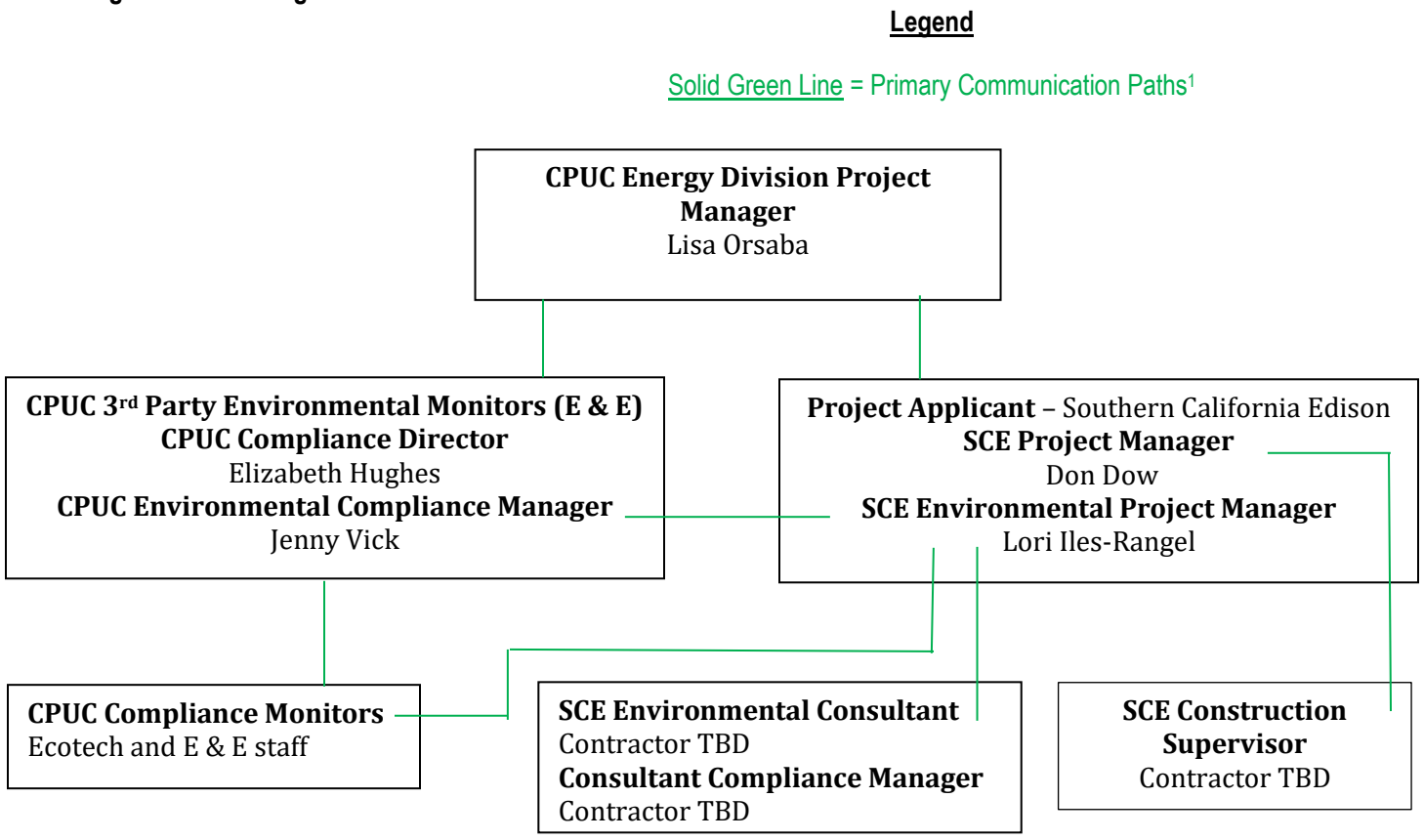
- The **CPUC (E & E) Compliance Director** supports the CPUC CM and CPUC Compliance Monitors and will provide senior-level advice as needed to the CPUC PM and the CPUC CM.
- The **CPUC (E & E) Compliance Manager** will oversee day-to-day monitoring activities of the Compliance Monitors and will be the designated point of contact for in-field agency staff regarding compliance, minor deviations, and minor project changes. The CPUC CM will work with the CPUC PM, CPUC (E & E) CD, and CPUC (E & E) Compliance Monitors to determine the appropriate level of inspection frequency, and will also oversee Compliance Monitors. The CPUC CM coordinates with CPUC Compliance Monitors to prepare monitoring reports for the CPUC. The CPUC CM will also have the most direct communication with the CPUC regarding monitoring and will serve as the point of contact for noncompliance events. The CPUC CM will stayed apprised of construction activities, schedule changes, and construction progress.
- The **CPUC (E & E or Ecotech) Compliance Monitors** will record compliance issues, notify appropriate project members of compliance issues, report any problems to the CPUC CM

and/or CPUC PM, and assist with other environmental monitoring activities (e.g., review of plans and reports submitted by SCE and tracking compliance activities). Compliance Monitors consist of staff from E & E and Ecotech Resources, Inc. The number of Compliance Monitors and frequency of site inspections will depend on the number of concurrent construction activities and their locations.

2.3 Organization Chart

Figure 2-1 is an organization chart of CPUC and SCE personnel that illustrates lines of communication among these personnel. The CPUC and SCE are responsible for informing others about changes in staff. Contact information is provided in Attachment A.

Figure 2-1. Organizational Chart



[1] This chart depicts primary communication pathways only and **does not preclude** communication among various CPUC or project proponent field staff (e.g., Compliance Monitors, Environmental Consultants, and Construction Leads/Managers) and/or all Environmental Managers.

2.4 Permitting Agencies Role

Personnel from permitting agencies identified in Section 1.2 may periodically visit the project site to verify compliance with, or request information from SCE regarding compliance with, laws, regulations, and project permits. SCE is responsible for responding to requests from permitting agencies and submitting the permits and authorizations to the CPUC according to project requirements. See Section 4 for document submission procedures.

The CPUC may contact permitting agencies at any time regarding the project and to clarify agency requirements, permit conditions, or approvals related to the agency's jurisdiction. The CPUC may also ask that SCE obtain input from the permitting agency or that SCE participate in discussion with the CPUC. The CPUC retains the authority to coordinate directly with other agencies regarding the project and all permit conditions or plan review comments.

3 Procedures

This section contains MMCRP procedures for the personnel identified in Section 2. These procedures will be implemented prior to, during, and after construction to facilitate project requirement implementation.

3.1 Communication Protocol

Communication is a critical component of a successful environmental compliance program. To avoid project delays and possible work stoppages, the CPUC, SCE environmental, and construction representatives will interact regularly; maintain professional, responsive communications at all times; and coordinate closely to address and resolve issues in a timely manner. This section presents a communication protocol to accurately and efficiently disseminate information regarding ongoing surveys, APMs, mitigation measures, construction activities, construction contractor oversight, and planned or upcoming work prior to the commencement of construction. These communication protocols may be refined and revised for future versions of this MMCRP as needed, to address the specific day-to-day realities of project construction.

3.1.1 Pre-Construction Coordination

SCE is required by the terms of the APMs and mitigation measures and the permitting requirements of various other regulating agencies to prepare plans and obtain approval of these documents, in addition to performing various surveys and studies prior to construction. During this pre-construction process, SCE will conduct meetings, conference calls, and site visits with technical representatives of the CPUC and other agencies, and SCE's environmental representatives as appropriate. The purpose of the pre-construction coordination process is to discuss document submittal status, document the findings of data reviews and permitting agency approvals, review SCE submittals, and document the status of APMs and mitigation measures as they apply to the project or phased project segment (see Section 4 for document submittal procedures). The goal of the pre-construction process is to complete all required actions so the CPUC can issue NTP authorizations.

3.1.2 Communication Protocol during Construction

This section outlines daily, weekly, and monthly communication protocols and processes.

3.1.2.1 Daily Communication during Construction

Regular communication among CPUC Compliance Monitors, SCE, and construction staff can address many issues that arise during construction. All field staff will be equipped with cell phones or two-way radios (or immediate access to a cell phone or radio) and should be available to receive calls at all times during construction. Offsite staff will be available during normal business hours via email or phone. If field-based staff change regularly (e.g., if lead monitors are on duty only one or two days per week), the use of a single point of contact is highly recommended (e.g., a single cell phone should be assigned to whichever lead monitor is on duty each day) to facilitate communication continuity. Changes to key staff will be reported to the CPUC PM and CM as soon as possible, and the project contact list in Attachment A updated accordingly.

CPUC Compliance Monitors

The CPUC Compliance Monitor's primary point of contact in the field is SCE's EPM. The CPUC Compliance Monitors will contact SCE's EPM if an activity is observed that conflicts with one or more of the APMs, mitigation measures, or project plans. The CPUC Compliance Monitor will also contact SCE's EPM regarding construction crew work locations; status of mitigation measures, APMs, and project plans; and the overall construction schedule. Much of this information can be obtained through participation in tailboard meetings prior to the start of construction each day. The CPUC Compliance Monitor may discuss construction procedures directly with the construction supervisor, but such discussions should be limited to basic questions pertaining to clarification of daily project activities and mitigation measure compliance. All other questions between contractors and CPUC Compliance Monitors, especially those concerning construction means and methods, should be directed to SCE's EPM. The CPUC Compliance Monitor will not provide work direction to the contractor or SCE's environmental monitors, and will avoid directing questions to the construction crews.

3.1.2.2 Progress Meetings and Communication during Construction

Conference calls may be held on a regular basis (i.e., weekly, monthly, or twice-monthly), or on an as-needed basis throughout construction. The need for conference calls, whether regular or as needed, should be determined in the early stages of construction. Participants should generally include the CPUC and SCE PMs, the CPUC CD and CM, the SCE EPM, the CPUC Compliance Monitors, and representatives from SCE who are knowledgeable about project engineering and schedule. Specialty monitors, technical experts, and/or construction contractors will be invited as needed. Call timing and participants may vary according to the topics discussed. Topics discussed on status update conference calls will include overall project schedule, weekly construction schedules, pertinent environmental compliance issues, any anticipated minor project changes, and any relevant compliance patterns and trends.

As discussed in Section 2.1.3, SCE will provide a Weekly Status Update to the CPUC PM and CM, which will include construction schedules for the upcoming week. SCE's CPM will provide drafts of the status updates to the EPM, who will review and approve the status updates before they are submitted to the CPUC PM and CM.

In addition, SCE will prepare and distribute a monthly Environmental Compliance Report for distribution to key project members, including the CPUC PM and CM. The CPUC CM will review the reports to ensure that the status of APMs and mitigation measures is consistent with observations in the field. The report will also be a tool to keep all parties informed of construction progress and compliance trends. Topics that should be covered in the report include:

- Construction status update for all active work phases and a look-ahead work description and schedule for subsequent work within each active package.
- Compliance summary detailing compliance activities such as notable survey efforts, non-compliance incidents and their resolutions, preparation for implementation of mitigation measures for future work phases, recently submitted or processed project changes, a list of outstanding agency deliverables, and representative monitoring photographs. SCE is required to keep accurate and detailed accounts of non-compliance incidents (and subsequent resolutions) as identified by the CPUC as well as self-reported.

3.1.3 Questions and Clarifications

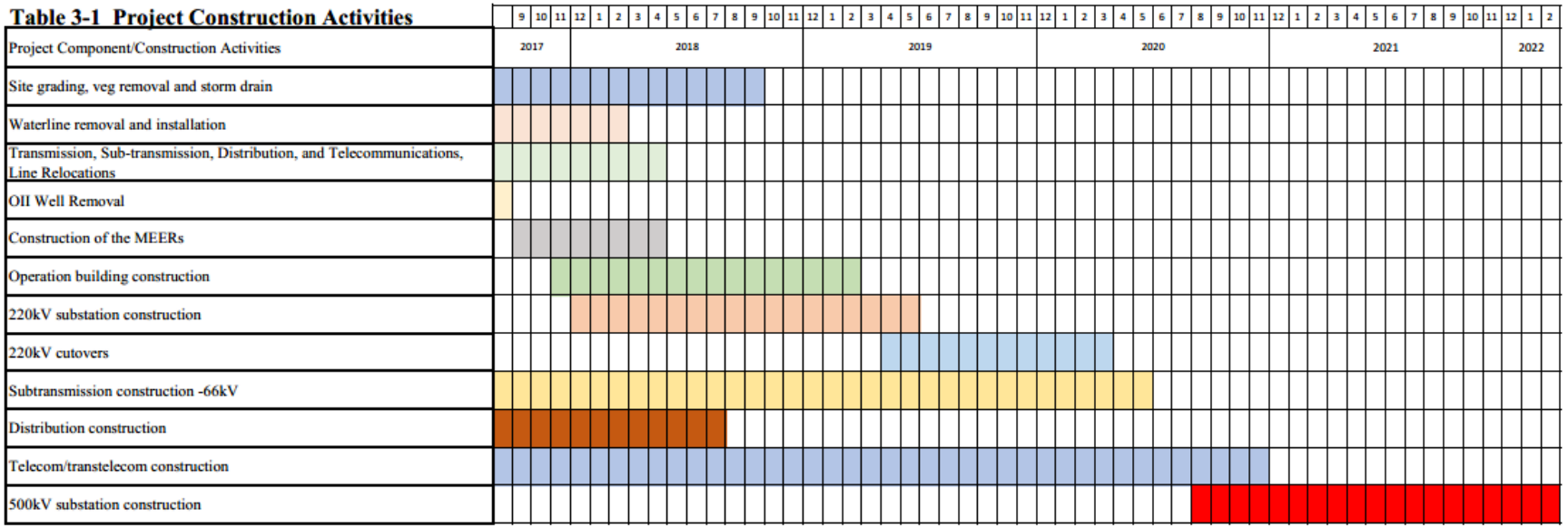
Questions and the need to clarify project requirements will periodically arise throughout the implementation process. Both SCE and the CPUC shall submit important questions and clarifications in writing via email (e.g., full compliance with mitigation measures, procedures, and project changes). Email correspondence and compliance and monitoring reports should be used to document resolutions.

3.1.4 Construction Schedule

SCE shall keep the CPUC team informed of delays in the construction schedule as contained in the MMCRP (see Table 3-1). In particular, SCE shall inform the CPUC of any schedule changes that may affect implementation of the MMCRP.

Table 3-1 Conceptual Construction Schedule (August 2017)

Table 3-1 Project Construction Activities



3.1.5 Dispute Resolution

The following procedure will be observed for dispute resolution:

- **Step 1.** Disputes and complaints (including those of the public) should be directed first to the CPUC PM or CM for resolution. The CPUC PM will attempt to resolve the dispute. If the dispute can be resolved by SCE, then the CPUC PM will direct the party in question to SCE. If the complaint is received by SCE's Public Relations Officer pursuant to Mitigation Measure (MM) NV-1 (Noise Control Plan), the complaint will be handled in accordance with MM NV-1.
- **Step 2.** Should this informal process fail, the CPUC PM may initiate enforcement or compliance action to address deviations from the project or adopted APMs and mitigation measures.
- **Step 3.** If a dispute or complaint regarding the implementation or evaluation of APMs or mitigation measures cannot be resolved informally or through enforcement or compliance action by the CPUC PM, any affected participant in the dispute or complaint may file a written "notice of dispute" with the CPUC Executive Director or his/her designee. This notice should be filed in order to resolve the dispute in a timely manner, with copies concurrently served to other affected participants. Within 10 days of receipt, the Executive Director or designee(s) shall meet or confer with the filer and other affected participants for the purposes of resolving the dispute. The Executive Director shall issue an Executive Resolution describing his/her decision and serve it to the filer and other affected participants.
- **Step 4.** If one or more of the affected parties is not satisfied with the decision as described in the resolution, such party(ies) may appeal it to the CPUC via a procedure to be specified by the CPUC.

Parties may also seek review by the CPUC through existing procedures specified in the CPUC Rules of Practice and Procedure for formal and expedited dispute resolution, although a good faith effort should first be made to use the foregoing procedure.

3.2 Pre-Construction Compliance Verification of CEQA Mitigation

Table 3-2 outlines the plans, reports, and other documentation required for pre-construction compliance verification. The CPUC will verify compliance with pre-construction APMs and mitigation measures prior to construction. If required by the mitigation measure or APM, SCE must obtain approval of all necessary resource-specific plans, verify that permitting requirements of other agencies have been met, and perform all required surveys and studies before construction begins. The purpose of the pre-construction process is to complete all required actions so that the CPUC can issue NTPs for the project.

The CPUC CM and technical experts will review plans and reports submitted by SCE and will provide comments and request revisions, if necessary. Other agencies may also review plans and reports prior to or concurrent with the CPUC, if required by APMs and mitigation measures or permits, and provide comments. SCE will provide the CPUC with the other agencies' comments on these documents to ensure that the plans and reports adequately achieve the goals, performance

standards, and any other requirements of the mitigation measure(s) or APM(s). The CPUC will only issue an NTP for the project if it is satisfied that resource-specific plans and reports comply with the goals, performance standards, and any other requirements of the applicable mitigation measure(s) or APM(s).

The CPUC may authorize construction on a phased basis, and E & E will handle pre-construction compliance review accordingly. In the event that construction authorization is issued in phases, NTPs will be issued for each phase, as soon as pre-construction compliance is satisfactorily accomplished for that phase.

Table 3-2 Mesa 500-kV Substation Project: Plans, Reports, and Other Documentation Required for Pre-Construction Compliance Verification

Item	MM or APM	Responsible Action Agency
Landscape and Aesthetic Treatment Plan	MM AES-3	CPUC, City of Monterey Park
Graffiti Prevention and Abatement Plan	MM AES-4	CPUC
Construction equipment's certified tier specification, BACT documentation, and/or CARB or SCAQMD operating permit	MM AQ-1	CPUC
Air Quality Documentation: 1. VOC/ROG ETCs 2. NO_X Reduction Measures 3. Mitigation Agreement for Purchase of NO_X Credits	MM AQ-2, MM AQ-3, MM AQ-4	CPUC
Biologist, archeologist, and paleontologist qualifications	MM BR-1; MM BR-2; MM BR-6; MM BR-9; MM BR-11; MM BR-12; MM BR-13; MM CR-3; MM CR-6; MM CR-4; MM CR-5	CPUC
Habitat Restoration and Mitigation Plan 1. Southern California black walnut restoration plan	APM BIO-1; APM BIO-2; MM BR-3; MM BR-7; MM BR-8	CPUC, USFWS, CDFW
Noxious and Invasive Weed Control Plan	MM BR-4	CPUC
Worker Environmental Awareness Program; cultural and paleontological resources training, hazardous materials training, dam failure evacuation training	MM BR-5; MM CR-2; MM HZ-2; MM HY-5	CPUC
Nesting Bird Management Plan	MM BR-11	CPUC, USFWS, CDFW
Jurisdictional Delineation	MM BR-14	CPUC, CDFW, USFWS, USACE, RWQCB

Table 3-2 Mesa 500-kV Substation Project: Plans, Reports, and Other Documentation Required for Pre-Construction Compliance Verification

Item	MM or APM	Responsible Action Agency
Avian Protection Plan	MM BR-15	CPUC, CDFW, USFWS
Paleontological Resources Management Plan	APM CUL-1	CPUC
Cultural Resources Evaluation Plan	MM CR-3	CPUC
Geotechnical Investigation	MM GEO-1	CPUC
Hazardous Materials Business Plan	MM HZ-1	CPUC, Los Angeles Certified Unified Program Agency
Spill Prevention, Control, and Countermeasure Plan	MM HZ-3	CPUC
Contaminated Soils Contingency Plan	MM HZ-4	CPUC
Well Management Plan	MM HZ-5	CPUC, OII Landfill, EPA
Stormwater Pollution Prevention Plan	MM HY-1	CPUC, SWRCB
Construction Drainage Plan	MM HY-3	CPUC
Detention Basin Design	MM HY-4	CPUC
Noise Control Plan	MM NV-1	CPUC
Helicopter Use: 1. Helicopter Lift Plan 2. FAA No-Hazards Determination 3. Helicopter landing positions 4. Coordination for Whittier Narrows Natural Area	MM TT-2; MM TT-3; MM TT NV-4; MM NV-5	CPUC, FAA
Traffic Control Plan	MM TT-1	CPUC, Caltrans, City of Monterey Park, City of Montebello

Key:
APM = Applicant Proposed Measures
BACT = Best Available Control Technology
CARB = California Air Resources Board
CDFW = California Department of Fish and Wildlife
CPUC = California Public Utilities Commission
EPA = U.S. Environmental Protection Agency
ETC = Emissions Trading Credits
FAA = Federal Aviation Administration
MM = Mitigation Measure
NO_X = oxides of nitrogen
OII = Operating Industries Incorporated
RWQCB = Regional Water Quality Control Board
ROG = reactive organic gases
SCAQMD = Southern California Air Quality Management District
SWRCB = State Water Resources Control Board
USACE = U.S. Army Corps of Engineers
USFWS = U.S. Fish and Wildlife Services
VOC = volatile organic compound

3.3 Notice to Proceed Process

SCE is required to obtain CPUC authorization prior to initiating construction activities through the NTP process. The NTP process involves SCE submitting an NTP request to the CPUC, and the CPUC

PM issuing an NTP Authorization Letter. The CPUC will not authorize construction activities until all relevant preconstruction requirements are completed as appropriate for the relevant stage of the project. Before granting an NTP, the CPUC will confirm that the applicant has complied with all preconstruction APMs and mitigation measures, including any required surveys, and has obtained all appropriate approvals from other regulatory agencies. The CPUC PM may authorize project activities through one or more NTPs for separate phases of the project as determined necessary. The applicant may determine the phases based on preconstruction compliance, construction schedule, the anticipated schedule for permit approvals, and other consideration.

Each NTP may include CPUC or other agency conditions or requirements that must be satisfied prior to the start of work or during construction. Construction is defined as all construction-related activities, including site clearing; placement of signs, fences, structures, or other materials; or any mobilization activity that would move construction-related equipment and/or materials onto a site.

An NTP request must include the following:

- Description of the work to be performed, including a brief comparison of the proposed work and the project component as described in the Final EIR;
- Description of all ancillary activities required for the project component or components (for example, electrical, plumbing, excavation, paving, landscaping, or site restoration);
- Identification of any staging areas that would be used during construction;
- Detailed description of the location of the project component or components covered in the NTP, including maps, photographs, and other supporting documents;
- Estimate of area of total land disturbance and use, both temporary and permanent, associated with the project component or components;
- Date of expected construction and duration of work;
- Anticipated number of construction workers, including total workers and peak number;
- Anticipated equipment required for construction;
- Verification that all relevant preconstruction APMs and mitigation measures have been completed or implemented;
- List of all relevant APMs and mitigation measures that will be implemented;
- Verification that all applicable permits or agency approvals have been obtained for the work covered by the NTP request (if required);
- If some preconstruction compliance items cannot be completed prior to issuance of the NTP, an identification and description of the outstanding submittals, as well as how they will be completed and approved in a timely manner prior to construction; and
- Up-to-date biological resource surveys or a commitment to survey and submit results prior to construction.

In conjunction with the CPUC CM, the CPUC Environmental Monitoring staff will review each NTP request in accordance with the steps outlined below:

1. SCE submits an NTP request;
2. The CPUC PM or CM distributes the NTP request to the appropriate resource specialists and reviewers to determine the completeness of the request, as applicable;
3. The CPUC PM and/or CM also review the NTP and, if needed, prepare a list of outstanding requirements, identifying where additional information or clarification is needed;
4. The CPUC PM or CM submits any questions and comments, including requests for required additional information or clarification, to SCE via email;
5. As needed, SCE submits clarifications and/or additional information to be added to the NTP request in a memo, email, or letter format, along with responses addressing all comments and questions forwarded by the CPUC PM and/or CM;
6. The CPUC PM and/or CM update the Project Implementation Tracker documenting compliance and any outstanding requirements that need to be made conditions of the NTP. If comments or conditions are provided by permitting agencies, these are also considered for incorporation into the NTP approval letter and compliance table;
7. The CPUC CM prepares the draft NTP Authorization Letter, which documents the scope of work, compliance with all requirements, and list outstanding conditions; and
8. The CPUC PM reviews and approves the NTP Authorization Letter and sends the approval to SCE.

3.4 Monitoring and Compliance Reporting during Construction

As the Lead Agency under CEQA, the CPUC is required to monitor the project to ensure that the APMs and mitigation measures are implemented. The Energy Division has primary responsibility for ensuring full compliance with the provisions of the monitoring program. The CPUC Compliance Monitors, under the supervision of the CPUC CM, will monitor construction activities in the project areas on a regular basis, particularly when construction activities have the potential to impact a sensitive resource.

3.4.1 SCE Monitoring and Compliance Reports

SCE may elect to have one or more full-time environmental monitors onsite on a daily basis to coordinate specialty monitors (such as biologists and archeologists), assist construction crews with interpreting APMs and mitigation measures, and help correct compliance problems in a timely manner. Several APMs and mitigation measures require SCE to supply a Specialty Monitor with specific qualifications. These monitors and the related APMs and mitigation measures are identified in Table 3-3.

Table 3-3 Specialty Monitors Required for Pre-Construction Surveys and Construction

Specialty Monitor	Related APM or MM
Biologist: general	MM BR-1; MM BR-2; MM BR-6; MM BR-9; MM BR-11; MM BR-12; MM BR-13
Biologist: avian	APM BIO-6; MM BR-11
Arborist	MM BR-3; MM BR-7
Botanist	MM BR-14
Archeologist/Cultural Resource Specialist	MM CR-3; MM CR-6
Paleontologist	MM CR-4; MM CR-5

Preconstruction biological, archaeological/cultural, and paleontological surveys are required where appropriate according to the adopted APMs and mitigation measures. SCE's approach to conducting the preconstruction surveys is guided by the project's individual resource treatment plans and will be implemented with the intent of fulfilling the intention of the applicable measures listed in Table 5-1. Preconstruction biological surveys can include a wide range of scopes and schedules. For example, some surveys were required prior to construction but are largely based on seasonal nesting or blooming periods. These include the Nesting Bird Management Plan, Noxious and Invasive Weed Control Plan, and Habitat Restoration and Mitigation Plan.

Additional surveys are required within a specific time frame based on the onset of construction. The preconstruction surveys required by MM BR-1 in the MMRP are conducted to identify sensitive biological resources in the project component areas, including access roads and staging areas within a maximum of 14 days prior to construction. In addition, preconstruction surveys are required as impact reduction measures for several specific special status species: western spadefoot (MM BR-1), Nevin's barberry (MM BR-6), coastal California gnatcatcher (MM BR-12), and least Bell's vireo (MM BR-13).

Preconstruction surveys for special status plant and wildlife species are required as clearance sweeps the day before or any day of construction required by MM BR-1. These would include all access, laydown/work, and staging areas where suitable habitat is present. The duration and spatial extent to which clearance surveys need to be conducted will be determined at the discretion of the lead SCE (consulting) biologist, and after consultation with appropriate resource agencies where applicable.

Other treatment plans require additional preconstruction surveys. These include surveys as described in the Cultural Resources Management Plan and the Paleontological Resources Management Plan. These surveys have been previously conducted in order to produce the treatment plans, to identify any special conditions or preconstruction mitigation that may be required.

The results of each survey will be included in either the individual component preconstruction survey report or the monthly Environmental Compliance Reports, depending on the timing of the survey. Information gathered from the preconstruction surveys will be forwarded to both the CPUC CM and PM for review and concurrence that the surveys were adequate and support the intent of the applicable measures from the MMRP. In addition, the results of the surveys will be shared at either preconstruction kick-off meetings or routine tailgate meetings with the construction

contractors to ensure they know what areas, if any, to avoid or ask for clarification from the environmental monitors. Ongoing preconstruction survey results shall be summarized in the monthly Environmental Compliance Reports.

3.4.2 CPUC Monitoring and Compliance Reports

The CPUC Compliance Monitors will conduct routine site visits at a reasonable frequency (generally once per week) to determine the project's compliance with the mitigation measures. During each site visit, CPUC Compliance Monitors will document observations within the project work areas through field notes and photographs. Monitors will fill out a site inspection form (Attachment B) to document the compliance of specific crews, construction activities, or protection measures. This form acts as a standardized checklist to facilitate inspections and record compliance with APMs and mitigation measures that were checked during visits.

The CPUC CM will use the site inspection forms and supplemental information provided by SCE, including preconstruction plan submittals, survey result reports, compliance reports, meeting notes, and agency correspondence to verify compliance. This information will be compiled into a monthly report that E & E will submit to the CPUC PM.

3.5 Non-Compliance Incidents and Stop Work Orders

The CPUC determines if any construction activity deviates from permit conditions, NTPs, APMs, or mitigation measures, particularly when the activity puts a sensitive resource at risk, would be considered a non-compliance incident. This includes all terms and conditions in permits or approvals from other federal, state, and local agencies that are relied upon in the mitigation measures and APMs. In addition, an APM or mitigation measure not implemented according to the timing listed in the MMCRP table (Table 5-1 in this document) would be considered a non-compliance incident. Examples of non-compliance include, but are not limited to, the following:

- Use of new access roads, staging areas, or extra work spaces not identified on the project drawings or approved for use during construction;
- Encroachment into an exclusion zone or sensitive resource area designated for avoidance;
- Brush clearing outside the approved work limits;
- Grading, foundation, or line work without required biological preconstruction surveys or a biological monitor onsite;
- Improper installation of erosion or sediment control structures if they put a sensitive resource at risk; and
- Discharge of sediment-laden trench or foundation hole water into a water body or storm drain.

3.5.1 Non-Compliance Incident Level

The CPUC uses the following levels to categorize the severity of non-compliance incidents:

Minor Compliance Incident: A minor compliance incident is an action that only slightly or partially deviates from project requirements and does not have the potential to cause or cause impact on an environmental resource. Examples include the one-time use of an unapproved, preexisting access road or failure to properly maintain an erosion or sediment control structure, but the structure remains functional. Repeated minor compliance incidents resulting from the same action or individual may result in elevating the non-compliance level.

Non-compliance Level 1: A Level 1 non-compliance incident is an action that deviates from project requirements or results in the partial implementation of the mitigation measures, but has not caused, nor has the potential to cause impacts on environmental resources. Examples include failing to properly maintain an erosion control structure, resulting in minor runoff that does not impact a sensitive resource, or work or staging of materials outside of approved work limits where the incident is within a previously disturbed area, such as a gravel lot.

Non-compliance Level 2: A Level 2 non-compliance incident is an action that deviates from project requirements or mitigation measures that has caused, or has the potential to cause minor impacts on environmental resources. Examples include construction activities occurring within an exclusion zone with indirect impacts to sensitive species or significant cultural or paleontological resources that can be rectified or halted before causing permanent damage. A non-compliance Level 2 may be issued when Level 1 incidents are repeated.

Non-compliance Level 3: A Level 3 non-compliance incident is an action that deviates from project requirements and has caused, or has the potential to cause major impacts on environmental resources. These actions are not in compliance with the APMs, mitigation measures, permit conditions, and/or approval requirements (e.g., MPCs, NTP), and/or violate local, state, or federal law. Examples include irreparable damage to archaeological sites, destruction of active bird nests, and grading of unapproved vegetated areas. A Level 3 non-compliance notice may also be issued if Level 2 incidents are repeated. Level 3 non-compliance incidents may result in a full or partial project shutdown following a stop-work order from the CPUC PM.

3.5.2 Non-Compliance Reporting

If SCE discovers a non-compliance incident of any magnitude, they must notify the CPUC CM of the incident (self-report). Non-compliance incidents may also be discovered by the CPUC Compliance Monitor, CM, or CD and brought to the attention of SCE. For both self-reports and discoveries, the CPUC CM may ask SCE to submit an email or a formal non-compliance incident report (Attachment C), either of which must include a description of the incident and corrective actions taken or proposed. Upon receipt of the non-compliance incident email or formal report, the CPUC CM and/or PM will assign the incident a level, if necessary, and determine next steps for reporting and follow-up. SCE must track all non-compliance incidents and include them in their monthly reports (see Section 3.1.2.2 for reporting procedures).

3.5.3 CPUC Compliance Team Incident Communication Process

The incident communication process is described below.

- A non-compliance incident may be discovered by the CPUC compliance monitoring team (off site) or observed by the CPUC Compliance Monitor (on site) during a site visit.

  - If the issue puts sensitive resources or human health and safety at risk and a stop-work order is warranted, the CPUC CM will contact the CPUC PM and SCE EPM immediately, as described further below. If the non-compliance does not require immediate resolution, the incident will be discussed in a phone call or email to the SCE EPM or on the weekly conference call.
  - If the incident is minor and can be easily resolved in the field by providing clarification to construction crews, or if it requires immediate action to prevent an easily avoidable but serious environmental impact, or if time is needed to investigate a compliance incident further, the CPUC Compliance Monitor will notify the CPUC CM, who may authorize a temporary hold. The temporary hold will be verbally conveyed by the CPUC Compliance Monitor to the SCE EPM to halt construction in a safe manner (see Section 3.5.4).
  - Once the issue is resolved, and after the CPUC Compliance Monitor consults with the CPUC PM or CM, the Compliance Monitor will verbally authorize the lift of the hold to SCE's EPM. If the issue is not fully resolved and may require further action or management discussions, the CPUC CM will recommend that the CPUC PM issue a stop-work order or initiate a stand-down.
  - If onsite SCE environmental monitors/EPMs are unaware of the issue or are aware of an issue but do not act within a reasonable time period to resolve it, the CPUC Compliance Monitor may record the non-compliance in their daily report. Level 1 incidents are "issued" in the site inspection form itself. Level 2 or 3 incident notifications require consultation with the CPUC CM and are issued in separate formal reports to SCE.

- If an incident is self-reported by SCE, the same procedure listed above should be followed, depending on the incident's severity (see Section 3.5.2 for reporting procedures). SCE should contact the CPUC CM immediately for serious incidents, and report minor compliance incidents via email and possibly a phone call. The CPUC CM will send an email notification to the SCE EPM to ensure tracking of the incident. The CPUC will typically not issue a non-compliance notice for a minor or level 1 self-reported incident.
- Following the initial discovery or report, the CPUC CM may request photographs, a written incident description, and other relevant information from SCE staff concerning the cause and potential resolution of the issue. The CPUC CM will direct SCE to submit the information via email or through a formal non-compliance report, according to the incident's severity. The CPUC CM and/or PM may issue a follow-up non-compliance report from the CPUC for the same incident.
- All non-compliance incidents must be described and tracked in SCE's monthly report and will be noted in E & E's monthly report to the CPUC PM. For serious non-compliance incidents, the CPUC PM may issue a stop-work order as described in Section 3.5.4. Work will be suspended within the affected area until a resolution can be planned and the CPUC PM authorizes the resumption of construction activities in writing.
- A stand-down may be initiated by the CPUC PM, CM, CD, or SCE, as described in Section 3.5.4. In this case, work will be halted temporarily to discuss a current compliance concern and/or re-align compliance activities as appropriate.

- Issues that are not resolved within the length of time agreed upon by SCE and the CPUC CM will be subject to further non-compliance notices and potential stop-work orders.
- Serious or emergency compliance incidents that occur on the weekend or after normal business hours (8am to 5pm) will be addressed by staff identified as emergency contacts on the Project Contact List (Attachment A).
- Permitting agencies may require notification if there is an incident that relates to an agency's jurisdiction over the project. SCE shall be responsible for notifications to permitting agencies and shall provide copies to the CPUC of official notifications and submittals sent to other agencies. If the CPUC finds that a notification to another agency is required, it may direct SCE to notify the other agency.

3.5.4 Construction Halts and Stop Work Orders

Several scenarios may occur during project construction for which the CPUC environmental team may need to communicate immediately with field staff to halt construction activity, including the following:

- A **temporary hold** is a short-term (i.e., less than 8 hours) cessation of construction activities that could be called by CPUC Compliance Monitors. This hold would be used in circumstances where minor clarification of a mitigation measure or resolution of a minor issue by the field compliance crews is necessary to ensure environmental compliance, or where a serious environmental infraction has occurred without immediate intervention. CPUC Compliance Monitors would consult with the CPUC PM or CM in the case of a temporary hold and are authorized to end the hold with clear communication to the SCE field coordinators, if the monitor confirms that environmental compliance will be achieved. Depending on the issue, a temporary hold could transition to a stop-work order (below).
- In the event that a serious non-compliance or safety issue occurs (e.g., take of a listed species; repeated, high-level non-compliance incidents concerning the same resource; or serious worker injury), the CPUC may elect to issue a **stop-work order**. The stop-work order would be issued in writing by the CPUC PM, and may require work to stop on all or portions of the project, or on certain construction activities, for a specifically stated time period as determined by the CPUC PM on a case-by-case basis. The stop-work order would also include a timeline for resolution of the situation and any potential recommendations from the CPUC compliance team. Resolution of the compliance issue would be communicated in writing by SCE to the CPUC PM, who would then issue an end to the stop-work order in writing. The applicant would be required to implement any temporary hold or stop-work order in a responsible manner to avoid hazards to public health and safety, as well as to environmental resources. Certain activities cannot be safely halted mid-course, and all work areas must be first safely secured for protection of humans and wildlife prior to complete cessation of work. Additionally, as appropriate, the applicant should address any serious safety issues by calling 911 immediately.
- Either the CPUC PM or CM, or SCE, may initiate a construction **stand-down** to discuss resolution of a non-compliance or safety issue. A stand-down differs from a stop-work order in that the issue at hand would not immediately result in serious consequences but requires an overall re-alignment of protocols or practices to ensure continued compliance or safety. The stand-down could require work to stop on all, or a portion of, the project for up to one

full day, or until a process and schedule for resolution can be determined by CPUC staff and SCE. The purpose of the stand-down would be to give SCE the opportunity to re-train construction personnel, confer with management staff to achieve resolution, and/or discuss an issue with the CPUC CM or PM. As indicated, a stand-down can be a voluntary action by SCE and should be issued in writing (email is acceptable) with clear timelines and recommendations outlined. Resolutions resulting from a stand-down should be submitted in writing to the CPUC PM. A stand-down called by SCE does not require approval by the CPUC to re-start work.

3.5.5 Public Complaints

The public may complain about the project. MM NV-1 includes requirements for receiving and handling noise complaints from the public. SCE shall document and report all other complaints to CPUC.

SCE shall provide weekly summaries of public complaints and how each complaint was addressed within the Weekly Status Update Report. The CPUC PM will coordinate with SCE's Construction Relations Officer on the adequacy of corrective actions or additional measures to be implemented, as necessary.

Public complaints will not reflect negatively on SCE's environmental compliance record unless a specific project requirement, permit, or plan requirement was violated.

3.5.6 CEQA Citation Program

Resolution E-4550 (May 9, 2013)[2] created the CEQA Citation Program that authorizes CPUC staff to fine public utilities for non-compliance with PTCs and Certificates of Public Convenience and Necessity. The program allows CPUC staff to draft and issue citations and levy fines for non-compliance with a PTC. CPUC staff will determine whether a fine is appropriate for non-compliance events consistent with Resolution E-4550. Examples of non-compliance that may result in fines being issued by CPUC staff include but are not limited to the following:

- Continuing construction after an authorized staff person has required construction to stop;
- Starting construction components that have not been approved through an NTP;
- Violating nest buffer zones;
- Encroachment into an exclusion zone or sensitive resource area designated for avoidance;
- Grading, foundation, line work, or other ground disturbance without required biological pre-construction surveys or a biological monitor onsite;
- Use of new access roads, overland travel routes, staging areas, or extra work spaces that have not been approved;
- Failure to properly maintain an erosion or sediment control structure;
- Working outside of approved work hours; and

[2] http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M065/K136/65136746.PDF

- Project personnel working without training.

3.6 Minor Project Changes

This section describes the CPUC's process for staff approval of project changes that may be necessary due to changes resulting after the applicant's final engineering of project elements, or if circumstances arise during the course of construction that require deviations from the project as approved. The CPUC, along with the CPUC CM, would evaluate any proposed deviations from the approved project to determine if they are consistent with approved CEQA requirements. Depending on its nature, a requested deviation would be processed as an MPC or be the subject of a Petition for Modification (PFM) submitted by the applicant.

MPCs would be strictly limited to minor project changes that do not trigger additional permit requirements, do not increase the severity of an impact or create a new impact, and are within the geographic scope of the EIR.

If a project change would create or have the potential to create a new significant impact, increase the severity of an impact, or occur outside the geographic area evaluated in the EIR, the applicant would be required to submit a PFM. The CPUC would evaluate the PFM under CEQA, as appropriate, to determine what form of supplemental environmental review would be required.

Requests for CPUC PM/CM approval of a change must be made in writing and should include the following:

- A detailed description of each proposed change, including an explanation of why the deviation is necessary;
- Identification of the APMs, mitigation measures, project parameter, or other project stipulation for which the change is being requested, and citations for the associated approved documents;
- Photographs, maps, and other supporting documentation illustrating the difference between the existing conditions in the project area, the approved project, and the proposed change;
- The potential impacts of the proposed change, including a discussion of each environmental issue area that could be affected by the changes, with accompanying verification that there would be no increase in significant impacts on resources affected by the project and no new significant impacts, after application of previously adopted APM(s) and/or mitigation measure(s);
- Whether the change would conflict with any APMs or mitigation measures;
- Whether the change would conflict with any applicable guideline, ordinance, code, rule, regulation, order, decision, statute, or policy; and
- The date of expected construction at the change site area.

The CPUC PM or CM may request additional information, agency consultations, or a site visit in order to process the request. An MPC request form is included as Attachment D.

Examples of changes that may be approved by the CPUC PM after final engineering include, but are not limited to:

- Adding a temporary extra work area. The additional work area must be located in a previously disturbed area with no sensitive resources or sensitive land uses adjacent to the proposed area, and must not create any new significant impacts or a substantial increase in the severity of a previously identified significant impact.
- Adjusting the alignment of a project component within the study area that was defined in the original environmental analysis to avoid sensitive resources or effects on homeowners, or adapt to conditions on the ground that vary from the conditions that existed at the time of the original environmental analysis, so long as the adjustment does not create a new significant impact or a substantial increase in the severity of a previously identified significant impact.
- Finalizing the engineering design for a project component that was not specifically described in the Final EIR, or that requires adjustments in order to facilitate construction. The finalized design must not create a new significant impact or a substantial increase in the severity of a previously identified significant impact.

3.7 Compliance Tracking

The CPUC will track compliance with mitigation requirements. The CPUC will also track important project procedures (e.g., formal request and approvals) and incidents throughout the project. The CPUC will track other information as part of the E & E-authored Monthly Monitoring Summary Report, including NTP and MPC requests and approvals, resolutions to compliance risks, and documented incidents.

4 Documentation and Submittal Requirements and Management

Electronic Submittals
All required documentation from SCE, including plans, permits, reports, and staff qualifications as required by APMs and mitigation measures, will be maintained by SCE on an internal website or online database system. SCE will ensure that the CPUC team has access to the internal website or database. In addition, SCE shall provide the CPUC with electronic records (i.e., emails, permits, and authorizations) related to final agency approvals for the project if the CPUC is not directly involved with the coordination effort, pursuant to Public Utilities Code section 314. SCE must also provide the CPUC with copies of permit amendments and modifications, in addition to notifying the CPUC of proposed permit changes. The electronic records may be submitted over email or transmitted via SCE's online database system.

Onsite Documentation
In addition, copies of all applicable plans and permits compiled prior to and during construction (e.g., Stormwater Pollution Prevention Plan, Noise Control Plan, United States Fish and Wildlife Service Biological Opinion, etc.) shall also be kept onsite (SCE construction trailer), and all supervisory staff working on the project should be familiar with their contents.

Administrative Record

The CPUC CM and other members of the E & E team will compile all required documentation submitted by SCE into the project's Administrative Record during construction and will confirm that the record is complete after completion of all activities required by the adopted APMs and mitigation measures. The CPUC CM will also use this documentation to create a final environmental compliance report or presentation for the CPUC PM that will discuss APM and mitigation measure implementation and success, with the goal of identifying lessons learned that can be applied to future projects.

Public Access
Through the CPUC's public website for the project, members of the public may request copies of records and reports used to track the monitoring program, and the CPUC PM or CM will send copies of publicly available records and reports to members of the public as requested. Certain mitigation monitoring–related documents will be made available on the project website: http://www.cpuc.ca.gov/environment/info/ene/mesa/mesa.html

5 Mitigation Monitoring Program Table

Table 5-1 presents the APMs and mitigation measures and incorporates all changes to the project, APMs, and mitigation measures that were made as a results of public review of the Draft EIR, dated April 2016.

A copy of the table should be kept with each crew working on the project, and all supervisory staff working on the project should be familiar with its contents.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
Aesthetics			
MM AES-1: Staging Area Screening. For Staging Yards 1, 2, 6, and 7, the applicant shall at a minimum screen most views of the interiors of these areas using perimeter screening fences or other effective screening. Perimeter screening fences will be a minimum of 6 feet high and covered with a dark-colored (e.g., dark green, brown, or black) fabric or other material that provides at least 50 percent screening and covers the fence exterior.	The CPUC shall verify that SCE installs screening fences at Staging Yards 1, 2, 6, and 7.	During Construction	Staging Yards 1, 2, 6, and 7.
MM AES-2: Minimize Clearing and Ground Disturbance and Improve Disturbed Areas. Clearing and ground disturbance required for construction, including but not limited to, access roads, pulling sites, construction and maintenance pads, and construction laydown areas, shall be the minimum required, and the applicant shall improve all disturbed areas not required for operation and maintenance to pre-construction conditions or better to the extent feasible. Improvement would not be feasible if, for example, a landowner other than SCE does not wish the area to be improved. Areas around new or rebuilt transmission structures that must be cleared during the construction process or other areas of ground disturbance shall be graded and revegetated to an appearance that would replicate or improve pre-construction conditions. The CPUC shall verify appropriate improvements of disturbed areas. For all paved areas (e.g., streets, sidewalks, and parking areas) disturbed by construction, the applicant shall restore these areas in compliance with permits for work within these areas.	The CPUC shall verify whether the restoration of disturbed areas proposed by SCE is to pre-project conditions. For disturbance covered by local permits (e.g., streets, sidewalks, and parking areas), the applicant shall restore these areas to pre-project conditions in compliance with permits for work within these areas.	During Construction – Clearing and ground disturbance shall be the minimum required. Post-construction – Areas that need to be cleared during construction shall be regraded and revegetated.	Any area where clearing and ground disturbance are required.
MM AES-3: Landscape and Aesthetic Treatment along Potrero Grande Drive. Prior to construction, the applicant shall prepare a Landscape and Aesthetic Treatment Plan that will, at a minimum, provide vegetative screening, with the use of California native and/or drought tolerant vegetation, and other aesthetic treatments (e.g., decorative caps on block walls) along Potrero Grande Drive and in the vicinity of the new entry drive at the substation, and provide aesthetic treatment of the operations and test and maintenance buildings and their immediate surroundings. The Landscape and Aesthetic Treatment Plan shall not conflict with NERC CIP requirements in CIP-014-2 (Physical Security) or related NERC findings. Aesthetic treatments along Potrero Grande Drive shall include design enhancements for the masonry screening wall, adjacent walkway, pavement surfaces, and planting areas and may include raised and median planters or other design enhancements. Aesthetic treatment of the operations and test and maintenance buildings and their immediate surroundings shall include	The applicant shall consult with the City of Monterey Park in development of the Landscape and Aesthetic Treatment Plan and both this plan and the final designs for the buildings shall be subject to design review and approval by the City. The Landscape and Aesthetic Treatment Plan shall be provided to the CPUC for final review and receive final approval from the CPUC prior to construction of these buildings and aesthetic	Prior to Construction – Prepare a Landscape and Aesthetic Treatment Plan. Post-construction – The Landscape and Aesthetic Treatment Plan shall be implemented within four months of beginning operation of the new substation.	Potrero Grande Drive and in the vicinity of the new entry drive at the substation, and operations and test and maintenance buildings and their immediate surroundings.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
improved color selection and design for the buildings and landscaping of their surroundings that will help screen views of the buildings and blend them with their surroundings. All color finishes for built elements shall be flat and non-reflective. The final Landscape and Aesthetic Treatment Plan along Potrero Grande Drive shall be prepared by a professional landscape architect licensed to work in California. The applicant shall consult with the City of Monterey Park in development of the Landscape and Aesthetic Treatment Plan and both this plan and the final designs for the buildings shall be subject to design review and approval by the City. The Landscape and Aesthetic Treatment Plan shall include the Landscape and Irrigation Plan and Wall Plan required to be submitted to the City for its review and approval as part of the overall permitting process. Copies of the final approved Landscape and Aesthetic Treatment Plan and associated City permits shall be provided to the CPUC prior to construction of these buildings and aesthetic treatments along Potrero Grande Drive. The final approved Landscape and Aesthetic Treatment Plan shall be fully implemented within four months of beginning operation of the new substation.	treatments along Potrero Grande Drive.		
MM AES-4: Graffiti Deterrence. Prior to construction, the applicant shall prepare a Graffiti Prevention and Abatement Plan that will, at a minimum, provide measures for the installation of vegetative screening, with the use of California native and/or drought tolerant vegetation, and the removal of graffiti within 48 hours of report or implement other measures to screen or substantially reduce aesthetic impacts associated with graffiti on the new 12-foot-high perimeter wall facing SR 60 along the southeast edge of the proposed Mesa Substation site, such as vegetative screening or other measures intended to fully or mostly screen views from SR 60 of the southeast-facing portion of the wall that is likely to provide a surface that attracts graffiti generally considered unattractive or offensive. The applicant shall consult with the City of Monterey Park in development of the Graffiti Prevention and Abatement Plan, and this plan shall be subject to review and comment by the City. The Graffiti Prevention and Abatement Plan shall be provided to the CPUC for final review and approval prior to beginning construction. The final approved Graffiti Prevention and Abatement Plan shall be fully implemented, including installation of all plants for vegetative screening, within four months of beginning operation of the new substation.	The Graffiti Prevention and Abatement Plan shall be provided to the CPUC for final review and approval prior to beginning construction.	Prior to Construction – Prepare a Graffiti Prevention and Abatement Plan. Post-construction – Implement the Graffiti Prevention and Abatement Plan.	The new 12-foot-high perimeter wall facing State Route 60 along the southeast edge of the proposed Mesa Substation site.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM AES-5: Glare Reduction. To reduce potential glare from components of the proposed project and help blend them into the landscape setting, the finishes on all new transmission and other structures with metal surfaces shall be non-reflective and new conductors shall be non-specular. With the exception of LSTs, TSPs, and switchracks, all metal structures up to 35 feet high, including transformer banks and new permanent buildings, and visible from the vicinity of KOP 7 shall have finishes that are dark in color or otherwise colored to help blend the structures with their surroundings.	CPUC verifies that all new transmission and other structures with metal surfaces installed by SCE be non-reflective and new conductors non-specular.	During Construction	All new transmission and other structures with metal surfaces.
MM AES-6: Night Lighting. To minimize the effect on any nearby sensitive receptors, night lighting for construction activities, staging areas and other areas used for construction, and nighttime facility operations shall be the minimum necessary to ensure safety and security for nighttime activities and operations. All night lighting used for construction or operations and maintenance shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use. Lighting at the proposed Mesa Substation shall consist of light-emitting diode lights in all areas where nighttime operations or maintenance activities would occur and be either motion-activated or use timers to the maximum extent feasible to ensure safety and security and reduce the impact of additional light pollution at night.	CPUC verifies that SCE uses the minimum lighting necessary to safety and security for nighttime activities and operations, orients downwards and shields all lighting, and ensures that lighting proposed at the Mesa Substation shall consist of light-emitting diode lights in all areas where operations or maintenance activities would occur.	During Construction	All locations with nighttime lighting.
Air Quality			
APM-AIR-01: Fugitive Dust. During construction, surfaces disturbed by construction activities would be covered or treated with a dust suppressant until completion of activities at each site of disturbance. On-site unpaved roads and off-site unpaved access roads utilized during construction within the proposed project area would be effectively stabilized to control dust emissions (e.g., using water or chemical stabilizer/suppressant). On-road vehicle speeds on unpaved roadways would be restricted to 15 miles per hour.	CPUC verifies that SCE applies dust suppressant to surfaces disturbed by construction activities, and all unpaved roads would be stabilized using a water/chemical suppressant.	During Construction	Entire project area.
APM-AIR-02: Tier 3 Engines. Off-road diesel construction equipment with a rating between 100 and 750 horsepower (hp) would be required to use engines compliant with EPA Tier 3 non-road engine standards. In the event that a Tier 3 engine is not available, the equipment would be equipped with a Tier 2 engine, and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled off-road construction equipment or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 2 engine is not available, that	CPUC verifies that all off-road diesel equipment between 100 and 750 horsepower us engines compliant with Tier 3 non-road engine standards. CPUC will verify if a Tier 3 engine is not available per proper documentation, and a	Prior to and During Construction	Any area where off-road diesel construction equipment is being utilized.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
equipment would be equipped with a Tier 1 engine and documentation of unavailability would be provided.	Tier 2 or Tier 1 engine must be used.		
MM AQ-1: Construction Emission Reduction Measures. SCE shall implement the following emission reduction measures for all construction activities: 1. All off-road diesel-powered construction equipment with engines greater than 100 horsepower (hp) shall be compliant with Tier 4 off-road emissions standards where available. In the event that equipment with a Tier 4 engine is not available for any off-road engine larger than 100 hp SCE shall investigate all available diesel retrofit technologies to reduce emissions. Any technologically feasible retrofit control technologies must be implemented. If emission levels equivalent to Tier IV standards cannot be reached, the emissions shall be reduced to the maximum extent possible based on the selected retrofit technology. Diesel retrofit technologies investigated shall include, but are not limited to, the Air Resource Board currently verified diesel emission control strategies. SCE shall document the results of its investigation for review by the CPUC. 2. All off-road diesel-powered construction equipment with engines greater than 50 hp shall be compliant with Tier 3 off-road emissions standards where available. In the event that equipment with a Tier 3 engine is not available for any off-road engine larger than 50 hp SCE shall investigate all available diesel retrofit technologies to reduce emissions. Any technologically feasible retrofit control technologies must be implemented. If emission levels equivalent to Tier III standards cannot be reached, the emissions shall be reduced to the maximum extent possible based on the selected retrofit technology. Diesel retrofit technologies investigated shall include, but are not limited to, the Air Resource Board currently verified diesel emission control strategies. SCE shall document the results of its investigation for review by the CPUC. 3. Equipment with an engine not compliant with the Tier 3 or Tier 4 standards, as applicable, will be allowed on a case-by-case basis only when the applicant has documented that no Tier 3 or Tier 4 equipment (or emissions equivalent retrofit equipment) is available for a particular	SCE shall submit to CPUC staff and/or construction monitors a copy of each piece of construction equipment's certified tier specification, BACT documentation, and/or CARB or SCAQMD operating permit, as applicable, at least 15 days prior to mobilization of each applicable unit of equipment.	Prior to and During Construction	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
equipment type. Each case shall be documented with signed written correspondence by the appropriate construction contractor, along with documented correspondence from at least two construction equipment rental firms representing a good faith effort to locate engines that meet Tier 3 or Tier 4 requirements, as applicable. Documentation will be submitted to CPUC staff for review before equipment is used on the project. 4. Submit to CPUC staff and/or construction monitors a copy of each piece of construction equipment's certified tier specification, best available control technology (BACT) documentation, and/or CARB or SCAQMD operating permit, as applicable, at least 15 days prior to mobilization of each applicable unit of equipment. In the event that unforeseen equipment replacement is required after the initial notification, replacement equipment may be used so long as notification is submitted 24 hours prior to mobilization of the replacement equipment. 5. Idling construction equipment will be turned off when not in use for periods longer than 15 minutes.			
MM AQ-2: Volatile Organic Compounds Credits. The remaining emissions of VOC/ ROG resulting from construction of the proposed Mesa Substation Project shall be mitigated through the purchase of Emissions Trading Credits (ETCs) for every pound of VOC/ROG in excess of the SCAQMD regional significance threshold of 100 pounds per day, as measured. The total amount of VOC/ROG ETCs to be purchased shall be calculated once the construction schedule is finalized. The applicant shall purchase and submit documentation of purchase of the required ETC to the SCAQMD prior to the start of construction. The applicant shall also track actual daily ROG emissions during construction according to a monitoring plan that includes records of equipment and vehicle usage and submit the results of this tracking to CPUC staff on a monthly basis. If monthly reports indicate that too few credits have been purchased to compensate for ROG emissions after implementation of all applicable mitigation measures, the applicant shall purchase additional ROG credits within 6 months of the end of construction. The applicant shall submit proof of the purchase of credits within 7 months of the end of construction.	CPUC verifies that SCE has purchased and submitted documentation of the required ETC to the SCAQMD, and that SCE submits the results of a monitoring plan tracking to CPUC staff. If monthly reports indicate that too few credits have been purchased to compensate for ROG emissions after implementation of all applicable mitigation measures, the applicant shall purchase additional ROG credits within 6 months of the end of construction. The applicant shall submit proof of the purchase of credits within 7 months of the end	Prior to Construction – Calculate the total amount of VOC/ROG ETCs to be purchased. During Construction – Adhere to monitoring plan and submit reports to CPUC on a monthly basis. Post-construction – Submit proof of the purchase of credits within 7 months of the end of construction.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
	of construction.		
MM AQ-3: Measures to Reduce NO_X Emissions. Prior to construction, the applicant will submit proposed additional measures to reduce daily emissions of NO_X to CPUC staff for review and approval, with the measures implemented depending on the amount of Tier III and Tier IV engines available at the time of construction. Measures may include the following: 1. The use of 2010 and newer haul trucks (e.g., material delivery trucks and soil import/export) or the use of trucks that meet EPA 2007 model year NO_X emissions requirements if 2010 model year or newer diesel trucks cannot be obtained. 2. Other measures as determined appropriate by the applicant-in consultation with the SCAQMD.	Prior to construction, the applicant and SCE will submit proposed additional measures to reduce daily emissions of NO_X to CPUC staff for review and approval, with the measures implemented depending on the amount of Tier III and Tier IV engines available at the time of construction.	Prior to Construction – Verify measures have been identified for implementation. During Construction – Implement proposed additional measures.	Entire project area.
MM AQ-4: Mitigation Agreement for Purchase of Oxides of Nitrogen (NO_X) Credits. Twenty days prior to the start of project construction, the applicant shall provide CPUC staff with an estimate of the total construction -related NO_X emissions after implementation of all applicable mitigation measures, broken down by individual construction day. All NO_X emissions that would exceed the daily threshold of 100 pounds per day shall be offset through the purchase of either Regional Clean Air Incentive Market Trading Credits (RTCs), Mobile Source Emission Reduction Credits (MSERCs), or a combination of RTCs and MSERCs. For each day that estimated NO_X emissions are less than 100 pounds per day, the purchase of NO_X offset credits is not required.	Twenty days prior to the start of project construction, the applicant shall provide CPUC staff with an estimate of the total construction-related NO_X emissions. The NO_X emission credits shall be purchased and submitted to CPUC prior to the start of project construction. SCE shall submit results of monitoring plan tracking to CPUC on a monthly basis. The applicant shall submit proof of the additional credits purchased during construction, within 7 months of the end of construction.	Prior to Construction – Provide CPUC staff with estimate of total construction-related NO_X emissions and purchase the credits. During Construction – Implement monitoring plan tracking equipment and vehicle use. If needed, purchase additional credits within 6 months of the end of construction. Post-construction – Submit proof of additional credits purchased during construction within 7 months from the end of construction.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
The total amount of NO_X RTCs and/or MSERCs to be purchased shall be determined by the CPUC after the construction schedule and operating conditions are finalized, based on estimates provided by the applicant as described above. The NO_X emission credits shall be purchased and submitted to the CPUC prior to the start of project construction. Credits must be current for the time the project takes place. The applicant shall also track actual daily NO_X emissions during construction according to a monitoring plan that includes records of equipment and vehicle usage and submit the results of this tracking to CPUC staff on a monthly basis. If monthly reports indicate that too few credits have been purchased to compensate for NO_X emissions after implementation of all applicable mitigation measures, the applicant shall purchase additional NO_X credits within 6 months of the end of construction. The applicant shall submit proof of the purchase of credits within 7 months of the end of construction.			
Biological Resources			
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 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.	CPUC shall verify pre-construction surveys for rare plants are conducted and the locations of special-status plants have been marked for avoidance. CPUC shall verify that a Revegetation Plan has been developed and implemented.	Prior to Construction – Conduct pre-construction surveys and mark special-status plants. During Construction – Avoidance of Nevin's barberry and special-status plants located during preconstruction surveys. Post-construction – Implement the Revegetation Plan.	All areas that may support special-status plant species.
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	CPUC shall verify that a Revegetation Plan has been developed and implemented, in	Prior to Construction – Prepare a Revegetation Plan.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
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 Stormwater Pollution Prevention Plan) 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.	coordination with the appropriate agencies.	Post-construction – Implement the Revegetation Plan.	
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 such resources are avoided.	CPUC verifies that biological monitors are present when construction occurs in areas with special-status species, native vegetation, wildlife habitat, or unique resources.	During Construction	All areas where special-status species, native vegetation, wildlife habitat, or unique resources may occur.
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 would commence between February 1 and August 30. Surveys for coastal California gnatcatcher would be conducted in suitable habitat within 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 exclusionary 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 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 gnatcatcher and their habitat would be mitigated as required by the USFWS.	CPUC verifies that a USFWS-approved biologist conducts pre-construction surveys for the coastal California gnatcatcher within suitable habitat, and construction activities occurring in occupied habitat would be monitored by a full-time USFWS-approved biologist. CPUC also verifies that appropriate mitigation, as required by USFWS, would be implemented in areas of temporary and permanent impacts to the coastal California gnatcatcher and their habitat.	Prior to Construction – Conduct pre-construction surveys. During Construction – Perform construction monitoring.	Suitable habitat within 500 feet of the project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
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 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.	CPUC verifies that a USFWS-approved biologist conducts pre-construction surveys for least Bell's vireo within suitable habitat, and construction activities occurring in occupied habitat would be monitored by a full-time USFWS-approved biologist. CPUC also verifies that appropriate mitigation, as required by USFWS, would be implemented in areas of temporary and permanent impacts to least Bell's vireo and their habitat.	Prior to Construction – Conduct pre-construction surveys. During Construction – Perform construction monitoring.	Suitable habitat within 500 of the project area.
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(s). 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 nests would continue until the adjacent construction activities are completed or until the nests are no longer active.	CPUC verifies that SCE conducts pre-construction clearance surveys no more than 7 days prior to construction, establishes buffers around active nests, and monitors construction activities around active nests.	Prior to Construction – Conduct pre-construction surveys. During Construction – Perform construction monitoring and establish buffer areas around nests.	Entire project area.
APM-BIO-07: Avian Protection. Electrical facilities would be designed in accordance with Avian Power Line Interaction Committee's *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (APLIC 2006).	CPUC verifies that SCE has implemented applicable design measures.	Prior to Construction	Power line components.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
APM-BIO-08: Compensation for Permanent Impacts. Permanent impacts to all jurisdictional water resources would be compensated at a 1-to-1 ratio, or as required by the USACE, CDFW, and RWQCB.	CPUC verifies that SCE consults with the appropriate agency (USACE, CDFW, or RWQCB) and mitigates all permanent impacts to jurisdictional waters.	Post-construction	All areas where permanent impacts to jurisdictional waters occurs.
MM BR-1: Pre-construction Surveys. Prior to construction and activities in a new work area that may include vegetation clearing, staging, and stockpiling, or other activities with the potential to directly or indirectly affect wildlife, the applicant shall retain a qualified biologist approved by the CPUC to conduct pre-construction surveys for sensitive biological resources, including special-status plant species and special-status wildlife, and nesting birds in all areas of temporary and permanent disturbance. Pre-construction surveys shall be species and resource appropriate and typically conducted a maximum of 14 days prior to construction as approved by the CPUC. If there is no work in an area for 14 days or more, the area shall be considered a "new work area" if construction begins again. Nesting bird and burrowing owl pre-construction surveys shall be consistent with the timing specified in the Nesting Bird Management Plan required by MM BR-11. Additional western spadefoot pre-construction surveys shall be conducted at any time of year where project activities cause vibrations and where artificial wetting of ground surface may result in spadefoot emergence. Western pond turtle pre-construction surveys shall include live trapping in areas where visual observation may be compromised due to water depth or dense vegetation growth near water. The information gathered from these surveys shall be used to develop site- and resource- specific actions to minimize impacts on sensitive resources from project-related activities. Additionally, a CPUC-approved qualified biologist shall conduct pre-construction clearance sweeps for special-status species at all access, staging, and laydown/work areas where suitable habitat is present within approximately 24 hours of construction activities each day.	CPUC verifies that pre-construction surveys are completed.	Prior to Construction	All areas of temporary and permanent disturbance.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM BR-2: Limits of Construction Activities: Project Boundaries and Sensitive Areas Clearly Marked. In all locations of the project, construction activities, vehicular traffic (including movement of all equipment), and storage of construction materials shall be restricted to approved access roads and established construction areas indicated by flagging, fencing, and/or signage. The applicant shall ensure that exclusionary fencing is installed prior to the start of construction activities around laydown and work and staging areas, where necessary and appropriate, to prevent inadvertent encroachment into the project area by special status species and the inadvertent encroachment by project activities into habitat. Identified sensitive resources such as aquatic features, special-status plants and natural communities, and known wildlife habitat of special-status species (e.g., nests, burrows, or dens) shall be assigned a buffer as appropriate and clearly marked (e.g., with signs, flagging, ropes, and/or fencing) to ensure they are avoided unless disturbance was previously approved. A CPUC-approved qualified biologist shall determine the appropriate buffer depending on the species and the construction activity. The CPUC-approved qualified biologist shall perform or supervise flagging and fencing to ensure that these activities are conducted without harm to sensitive species or habitat. If special-status wildlife, or evidence of special-status wildlife or special-status plant species not previously analyzed in this document, is found at any time, the applicant shall immediately halt work and contact the appropriate wildlife agency(ies) and the CPUC. Work will resume once the CPUC provides approval.	CPUC verifies that construction activities are limited to approved work areas and access roads, and are indicated with flagging, fencing, and/or signage.	Prior to Construction	All locations of the project, construction activities, vehicular traffic, and storage of construction materials.
MM BR-3: Habitat Restoration and Mitigation. Prior to construction of the proposed project the applicant shall ensure that seasonally-appropriate surveys of vegetation are completed by a qualified botanist familiar with these vegetation associations. SCE shall develop a Habitat Restoration and Mitigation Plan that shall include an estimate of the total area of sensitive natural communities, including all coastal California gnatcatcher habitat and riparian habitat. With the consultation, review, and comment from the USFWS, CDFW, and CPUC, SCE shall prepare the plan to ensure restoration of all temporary impact areas and to ensure mitigation for permanent impacts on sensitive natural communities and coastal California gnatcatcher habitat. The	The plan must be submitted 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented. CPUC shall verify that USFWS and CDFW have reviewed the plan.	Prior to Construction – Ensure seasonally appropriate surveys of vegetation are completed and a Habitat Restoration and Mitigation Plan is prepared. During Construction - Minimize the removal of	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
plan must be submitted 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented. Required plan details include but are not limited to: • All temporarily impacted areas shall be restored. All temporary disturbances to sensitive natural communities shall be restored with the pre-disturbance natural community (except for areas burned in the 2015 "Lincoln" fire, which shall be restored to the pre-fire natural community). All other temporarily impacted areas observed to be utilized by the coastal California gnatcatcher shall be restored with the appropriate coastal sage scrub community if feasible. Temporary impacts on sensitive natural communities and habitat utilized by gnatcatchers shall be mitigated by restoration at a minimum ratio of 1.5:1; if restoration is not feasible within 1 mile of the project area, SCE shall purchase credits and/or mitigation lands at a minimum ratio of 2.5:1 from an entity approved by CDFW and/or USFWS, as appropriate. Areas that do not provide habitat to coastal California gnatcatcher, other special-status species, or sensitive resources may be restored to the conditions agreed upon between the landowner and the applicant. • The restoration plan shall specify how each type of vegetation community, including sensitive natural communities, shall be addressed in terms of the following restoration details: topsoil segregation and conservation; vegetation treatment and removal; revegetation methods, including seed mixes, rates, appropriate habitat structure, and transplants; criteria to monitor and evaluate revegetation success (minimum of four years of monitoring and 80% successful native plant establishment); and compensation and remedial measures to be implemented as needed. • For sensitive natural communities, mitigation of permanent impacts shall occur after construction at a minimum level of 1.5:1. In addition, permanent disturbances to coastal California gnatcatcher habitat that is not coastal sage scrub or another sensitive natural community shall be mitigated at a minimum 1.5:1 ratio with appropriate coastal sage scrub. Mitigation for permanent impacts shall be completed through one of the following methods:	With CPUC approval, requirements described in this mitigation measure and the Habitat Restoration and Mitigation Plan may be satisfied through compliance with permit conditions, if these requirements are equally or more effective.	coastal sage scrub or other suitable coastal California gnatcatcher habitat. Post-construction – Restore all temporarily impacted areas and mitigate for permanent impacts on sensitive natural communities and coastal California gnatcatcher habitat.	

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
1. Establishing the natural community within the proposed project areas (onsite); 2. Establishing the natural community outside the proposed project areas (within one mile of the project area); or 3. If Options 1 and 2 are not feasible, SCE shall purchase credits and/or mitigation lands at a minimum ratio of 2.5:1 from an entity approved by CDFW and USFWS, as appropriate. For Options 1 and 2 (onsite and offsite), the plan shall specify restoration details, including that post-construction monitoring shall be performed for a minimum of four years, a success criteria of 80% successful native plant establishment shall be met, and remedial measures shall be implemented if success criteria are not met. • Impacts on areas that were previously restored for SCE's TRTP shall be avoided if possible. The plan shall identify any impacts on areas that were previously restored for TRTP and provide detailed restoration plans for these areas. Restoration in these areas shall follow restoration criteria that are consistent with the goals and criteria of TRTP restoration, per TRTP Mitigation Measure B-1a: Provide restoration/compensation for impacts to native vegetation communities. With CPUC approval, requirements described in this mitigation measure and the Habitat Restoration and Mitigation Plan may be satisfied through compliance with permit conditions, if these requirements are equally or more effective. SCE shall also minimize the removal of coastal sage scrub or other suitable coastal California gnatcatcher habitat, particularly within designated critical habitat for the coastal California gnatcatcher. To minimize the removal of vegetation in habitat areas of the coastal California gnatcatcher, SCE shall ensure that trimming of all native vegetation, riparian vegetation, and vegetation that provides potential habitat for coastal California gnatcatcher is monitored by a qualified biologist approved by the CPUC. Trimming of native			

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
trees and native arborescent shrubs shall be completed outside of the nesting bird season and shall be monitored by a qualified arborist.			
MM BR-4: Noxious and Invasive Weed Control Plan. Prior to construction, the applicant shall submit a Noxious and Invasive Weed Control Plan that shall be implemented before, during, and after construction, including during the project restoration phase. This plan shall include measures designed to avoid the introduction and spread of noxious weeds and invasive plant species designated by the state, the counties, and local weed control boards. This plan shall be developed in consultation with the CPUC and must be submitted to the CPUC 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented. At a minimum, this plan shall include the following measures: • Pre-construction surveys for special-status plant species (APM BIO-01 and MM BR-1) shall include surveys for state-, county-, and locally designated noxious weed species. The applicant shall coordinate with the appropriate agencies, including the CPUC, to determine appropriate species-specific measures to implement, or whether control or treatment of a species is feasible and preferable. • All vehicles and equipment shall be clean and free of dirt, mud, and any debris that may carry invasive plant seeds or parts prior to arrival at the project location, including prior to use of access roads. • Vehicle and equipment wash stations (mobile or built in place) shall be erected at strategic locations on the ROW where designated weed species have been detected, and where doing so would help prevent the spread of these species. • Straw, hay, gravel, soil, or other construction or erosion control materials that could inadvertently contain unwanted plant propagules shall come from state-cleared sources that are free of invasive weeds. • All seeds to be used in revegetation and reclamation activities shall come from weed-free sources.	This plan shall be developed in consultation with CPUC and shall be provided to these agencies for review and comment. The plan must be submitted to the CPUC 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented.	Prior to Construction – Prepare and submit a Noxious and Invasive Weed Control Plan and perform pre-construction surveys for special-status plant species. During Construction – Implement the Noxious and Invasive Weed Control Plan. Post-construction – Monitor of all restored work areas for the presence of invasive weeds.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• All temporary disturbance areas that will be restored post-construction shall be monitored for invasive species establishment on a monthly basis during the growing season and on a quarterly basis outside of the growing season for at least one year after project restoration is completed. If evidence of the expansion or increase in abundance of a known invasive species or introduction of a new invasive species is found, the applicant shall initiate appropriate control measures, which may include mowing or trimming of weeds prior to seed set, as outlined in the plan.			
MM BR-5: Worker Environmental Awareness Program. The applicant shall develop and implement a WEAP for all project personnel. The program must be submitted to the CPUC at least 30 days prior to the start of construction for review. CPUC approval is required before the program is implemented. All project personnel shall undergo training prior to entering the ROW. The training shall include a description of the species of concern and their habitats, the general provisions of applicable environmental regulations, the need to adhere to the provisions of the regulations, the penalties associated with violating the provisions of the regulations, the general measures that are being implemented to conserve the species of concern as they relate to the project, the access routes to the project, and project boundaries within which the project-related activities must be accomplished. This training shall include a detailed review of how project personnel can identify sensitive biological resources in the project area which need to be avoided or where work activities will be restricted.	SCE shall submit sign-in sheets for those who attended WEAP training.	Prior to Construction – Submit WEAP During Construction – Submit sign-in sheets monthly	Entire project area.
MM BR-6: Avoidance of Nevin's barberry. The project shall be designed to avoid impacts on occurrences of Nevin's barberry during construction and operation and maintenance. Prior to the start of construction, the applicant's CPUC-approved qualified biologist shall complete pre-construction surveys in suitable habitat to identify any occurrences. Where Nevin's barberry occurs, all construction and operation and maintenance activities shall occur outside a restrictive buffer, which shall be established by a CPUC-approved qualified biologist. Vehicles and crew members shall be prohibited from coming within 200 feet of identified Nevin's barberry unless a buffer reduction is approved by the CPUC after coordination with USFWS. A reduced buffer shall be a minimum of approximately 15 feet from a Nevin's barberry plant. A qualified biologist approved by the CPUC shall monitor crew members and the Nevin's	SCE shall submit preconstruction survey results to the CPUC, report any previously unknown occurrences found during pre-construction surveys or construction, and submit a monitoring report.	Prior to Construction – Conduct pre-construction surveys in suitable habitat to identify any occurrences and establish a buffer around any occurrences. During Construction – Monitor construction around buffers.	Areas of suitable habitat for Nevin's barberry and around known occurrences.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
barberry to ensure all project activities stay away from Nevin's barberry within the buffer. The biologist shall have the authority to halt work if it is determined that Nevin's barberry could be impacted. In the event that previously unknown occurrences of Nevin's barberry are discovered during pre-construction surveys or during construction or operations, a 200-foot buffer shall be established and the USFWS and CPUC shall be contacted within 24 hours.			
MM BR-7: Restoration of Southern California Black Walnut. SCE shall take measures to avoid and minimize impacts on Southern California black walnut resulting from project construction activities, and shall plant replacement trees for any impacted or removed specimens. Prior to construction (after completion of final engineering design of project features), black walnut tree evaluation surveys shall be completed by a qualified arborist (an arborist with extensive local or regional expertise in the planting, care, and maintenance of black walnut trees). The arborist must be approved by the CPUC. The arborist shall record a brief description (e.g., location, height, diameter at breast height, condition) of each black walnut tree with a dripline within 25 feet of construction activities. All construction activities that take place within the driplines of black walnut trees (i.e., the outermost extent of the canopy) that are not being intentionally removed shall be monitored by a qualified arborist to reduce, to the extent feasible, impacts on the tree, including roots. California black walnut trees that are impacted within the drip line or intentionally removed shall be replaced at a 2:1 ratio. If the diameter at breast height of the tree to be removed is 24 inches or less, it shall be replaced with a 24-inch box tree. If the diameter at breast height of the tree to be removed is greater than 24 inches, it shall be replaced with a 36-inch box tree. Replacement trees shall be planted on site as near to the original location as feasible and biologically appropriate, and shall be monitored by a qualified arborist who will ensure the replacement trees are placed in a suitable area. Replacement trees shall be monitored for seven years after the initial planting or until the arborist determines that 80 percent of trees are successfully established. If onsite replacement is not feasible, SCE shall plant replacement trees offsite as near to the proposed project as is appropriate and feasible. The	CPUC shall approve a detailed plan for restoration, including identification of planting location, in consultation with USFWS and CDFW.	Prior to Construction – Complete black walnut tree evaluation surveys. During Construction – Monitor construction activities that take place within the driplines of black walnut trees. Post-construction – Replace those black walnut trees impacted or removed by construction activities.	All project locations where black walnut trees occur.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
same monitoring requirements and success criteria would apply as for those trees planted onsite. If neither of the two options above are feasible, SCE shall purchase credits and/or mitigation lands from an entity approved by CDFW such that a restoration ratio of 4:1 is achieved. Tree removal shall not be permitted until a detailed plan for restoration, including identification of planting location, or offsite mitigation lands, is approved by the CPUC, and in consultation with USFWS and CDFW. Replacement trees shall be planted before tree removal, or if not feasible or if potentially harmful to the replacement trees, as soon as possible after removal.			
MM BR-8: Restoration of Special-status Plants. The applicant shall complete pre-construction surveys during the appropriate blooming period to identify special-status plants, including Coulter's Matilija poppy, Plummer's mariposa lily, intermediate mariposa lily, and Southern tarplant populations in the proposed project component areas where suitable habitat is present. Special-status plants shall be identified by a qualified biologist and flagged or surrounded with fencing in such a way that disturbance of the populations or individuals shall be avoided. In the event that populations or individuals of special-status plants (other than Southern California black walnut—see MM BR-7) cannot be avoided, the applicant shall develop and implement a restoration plan for each plant which will be submitted to CPUC and CDFW for review and comment no less than 60 days prior to construction activities within the work area where impacts would occur. The CPUC will coordinate with CDFW, and CPUC approval is required before the plan is implemented. In the case of Southern California black walnut trees, a restoration plan will be completed and approved as described in MM BR-7. For temporary impacts to special-status plants, restoration shall occur after construction at a minimum ratio of 1.5:1 for all special-status plants in the proposed project component areas. The number of plants at seven years will be a minimum of 1.5 times the number destroyed. Mitigation for temporary and permanent impacts shall be completed by:	CPUC shall verify that pre-construction surveys occur during the appropriate blooming period and that any special –status plants are flagged or fenced for avoidance. In the event that populations or individuals cannot be avoided, the applicant shall develop and implement a restoration plan for each plant, which will be submitted to CPUC and CDFW for review and comment no less than 60 days prior to construction activities within the work area where impacts would occur. CPUC approval is required before the plan is implemented.	Prior to Construction – Conduct pre-construction surveys. Develop restoration for each special-status plant that cannot be avoided.	All project areas where suitable habitat is present for Plummer's mariposa lily, intermediate mariposa lily, and Southern California tarplant.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
1. Establishing individual plants within the proposed project areas (onsite); 2. Establishing individual plants outside the project areas (offsite); or 3. Purchase of credits and/or mitigation lands at a ratio of 2.5:1 from an entity approved by CDFW. For Options 1 and 2 (establishing plants onsite or offsite), the plan shall include the following elements: planting/seeding palettes; monitoring and contingency program; monitoring schedule, including duration (seven years) and performance criteria (minimum of 1.5 times the number destroyed); and any specific measures that will be required to ensure success of the restoration effort. This mitigation measure may be coordinated with areas restored for MM BR-3 if appropriate.			
MM BR-9: Construction Monitoring. The applicant shall ensure that a qualified biologist approved by the CPUC serves as a construction monitor during periods when construction activities occur near active nest areas, or within 100 feet of native vegetation or vegetation that has the potential, or is known, to provide habitat for special-status species. The monitor shall have the authority to temporarily stop work that they determine threatens a special-status species or sensitive resource. The monitor shall determine what appropriate action to take, and work will resume once the monitor determines there is no longer a threat to the special-status species or sensitive resource, or consultation has occurred with the appropriate wildlife agencies which determines appropriate steps have been taken and a threat is no longer present.	CPUC shall verify that a CPUC-approved biologist is present during construction activities occurring near active nest areas, or within 100 feet of native vegetation or vegetation that has the potential, or is known, to provide habitat for special-status species.	During Construction	All project areas near active nest areas, or within 100 feet of native vegetation or vegetation that has the potential, or is known, to provide habitat for special-status species.
MM BR-10: Open Trenches and Pipes. To prevent entrapment of wildlife, SCE shall ensure that all steep-walled trenches, auger holes, open-ended piping, or other excavations are covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. For open trenches only, these may instead have wildlife escape ramps within the trench maintained at intervals of no greater than 100 feet. These ramps shall have a maximum slope not to exceed 2:1. SCE's biological monitor, approved by the CPUC, shall inspect all trenches, auger holes, or other excavations a minimum of three times per day and immediately prior to backfilling. During working hours, all construction materials with open-ended piping, including	CPUC shall verify that all steep-walled trenches, auger holes, or other excavations are covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. Escape ramps are acceptable for open trenches only.	During Construction	All project areas containing steep-walled trenches, auger holes, or other excavations.

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but not limited to pipe sections and fencing supports, shall be left capped when not planned for use the same day. During active construction, open piping shall be inspected for wildlife by SCE's biological monitor before the material is moved, buried, or capped. All non-special-status wildlife species found will be safely removed and relocated out of harm's way, through the use of suitable tools such as a pool net when applicable. For safety reasons, under no circumstance will biological monitors enter open excavations.			
MM BR-11: Nesting Bird Management Plan. To address potential conflicts between construction activities and the activities of nesting birds in the project component areas, SCE shall develop a nesting bird management plan in consultation with USFWS, CDFW, and CPUC, and shall submit the final plan to the CPUC no less than 60 days prior to construction. CPUC approval is required before the plan is implemented. The nesting bird management plan shall include measures and an adaptive management program to avoid and minimize impacts to special-status and MBTA- or California Fish and Game Code-protected bird species during nesting periods during project construction. Specifically, the nesting bird management plans shall contain: • Appropriate survey timing, extents, methods, and surveyor qualifications; approved nest deterrent methods, including areas where vegetation will be cleared for the purpose of deterring nesting; monitoring and reporting protocols during construction; protocol for determining whether a nest is active; protocol for documenting, reporting, and protecting active nests within construction areas. If pre-construction survey protocols exist for a certain species, the plan shall identify the species-specific protocol that will be followed and outline how SCE will comply with the protocol. • Guidelines for determining appropriate and effective buffer distances that will account for specific project settings, bird species, stage of nesting cycle, and construction work type. Language for buffer reduction process will be included in the plan, which shall include coordination with the appropriate wildlife agencies and the CPUC if reducing the buffer of a special-status species. • Language specifying that the determination of appropriate and effective buffers between construction activities and identified nests shall be site-	SCE shall develop a Nesting Bird Management Plan in consultation with USFWS, CDFW, and CPUC, and shall submit the final plan to the CPUC no less than 60 days prior to construction. CPUC approval is required before the plan is implemented. Reporting of nesting bird activities, buffer reductions, and monitoring results shall be provided to the USFWS, CDFW, and the CPUC on a regular basis.	Prior to Construction – Conduct surveys during the appropriate nesting season. During Construction – Perform monitoring and prepare reports.	All work areas in which any construction related activities are conducted.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
and species/guild-specific and data-driven, and will not be based on generalized assumptions regarding all nesting birds. • Language specifying that determinations of appropriate and effective buffers between construction activities and identified nests can be made in the project construction area by the CPUC-approved biological monitor (qualified in accordance with nesting bird plan standards, which will include specific requirements for education and experience in conducting biological surveys and with specific birds in the project area). • Vertical buffers shall be put in place in those areas where helicopters will be used, and they will be based on anticipated effects of rotor wash and noise for the class of helicopter being used by SCE. Surveys and monitoring of the active buffer areas will be performed by a CPUC-approved biologist before, during, and after helicopter use in the vicinity of active buffers. • Burrowing owl pre-construction surveys shall adhere to the current burrowing owl survey protocol identified by CDFW (i.e., CDFW's Staff Report on Burrowing Owl Mitigation [CDFG 2012]). If pre-construction burrowing owl surveys confirm the presence of burrowing owl, SCE shall submit a Burrowing Owl Compensation Plan, in consultation with CDFW and the CPUC, which is consistent with mitigation guidelines in the Staff Report, prior to construction. The final Burrowing Owl Compensation Plan shall be implemented, as specified, throughout construction and restoration. The plan shall describe the compensatory measures that will be undertaken to address the loss of burrowing owl burrows within the project area. This will include mitigation for permanent impacts on nesting, occupied, and satellite burrows and occupied burrowing owl habitat with (a) permanent conservation of similar vegetation communities comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. SCE shall notify CDFW, USFWS, and the CPUC of all project-related bird injuries or mortalities within 12 hours of discovery and will follow the agencies' recommended actions, if any. Reporting of nesting bird activities,			

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
buffer reductions, and monitoring results shall be provided to the USFWS, CDFW, and the CPUC on a regular basis.			
MM BR-12: Gnatcatcher Surveys. Prior to the start of construction, SCE shall ensure that protocol-level pre-construction surveys are conducted by a qualified biologist approved by the CPUC for the coastal California gnatcatcher in project component areas where suitable habitat exists in accordance with the Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines (USFWS 1997). In the event that coastal California gnatcatchers are observed during pre-construction surveys, a qualified biologist must identify the boundaries of the pair's territory and SCE must not conduct construction activities within 500 feet of the territory, or as otherwise approved by the CPUC, in consultation with USFWS. SCE shall notify USFWS and the CPUC in the event gnatcatcher territory or nest sites are confirmed by surveys, immediately upon return from the field. If infeasible to maintain a buffer of 500 feet (or a distance otherwise approved by USFWS), by installing temporary flagging or fencing, from an active gnatcatcher territory, construction activities within or near these areas will be performed outside the breeding and nesting season (coastal California gnatcatcher breeding/nesting season is approximately February 1 through August 30). SCE may conduct construction activities in gnatcatcher habitat during the breeding and nesting season if protocol-level surveys (conducted within one year prior to construction activities per protocol) confirm the absence of breeding gnatcatchers, or if the 500-foot protective buffer from all active gnatcatcher territories can be maintained.	CPUC shall ensure that protocol-level surveys are conducted.	Prior to Construction – Conduct protocol-level surveys. During Construction – Perform monitoring and prepare monitoring reports.	All work areas where suitable coastal California gnatcatcher habitat exists.
MM BR-13: Pre-Construction Surveys for Least Bell's Vireo. Prior to construction and within their breeding season (generally April 10-August 31), SCE shall complete protocol-level surveys for least Bell's vireo in areas of suitable or potentially suitable riparian and other habitat within the proposed component areas. Surveys will be conducted by a qualified biologist approved by the CPUC according to the survey protocol for least Bell's vireo (USFWS 2001). In the event that least Bell's vireo territory or nest sites are confirmed, SCE shall notify the USFWS and CDFW within 24 hours of returning from the field. If individuals or their nests are observed, biologists will establish and maintain a minimum 500-foot (or a distance otherwise approved buffer from USFWS and CDFW) exclusionary buffer by installing temporary flagging or	CPUC shall ensure that protocol-level surveys are conducted.	Prior to Construction – Conduct protocol-level surveys. During Construction – Perform monitoring and prepare monitoring reports.	All work areas where suitable least Bell's vireo habitat exists.

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fencing between the nest territory and construction activities. If infeasible to maintain a buffer of 500 feet (or a distance otherwise approved by USFWS and CDFW), from an active vireo territory, construction activities within or near these areas will be performed outside the breeding and nesting season.			
MM BR-14: Minimize Impact on Riparian Habitat and Aquatic Features. SCE shall complete the following: 1. In those areas where riparian vegetation is required to be removed, SCE shall work with a qualified botanist to determine the minimum amount of vegetation required to be removed in order to accommodate project construction, and the correct trimming procedures to employ. 2. Temporary impacts to riparian habitat or aquatic features shall be fully restored according to the Habitat Restoration and Mitigation Plan described in MM BR-3. All permanently impacted areas shall be mitigated using methods described in MM BR-3. 3. Where riparian vegetation or aquatic features would be impacted by project construction activities, SCE shall also consult with USACE, RWQCB, and CDFW to determine if a CWA Section 404 permit, CWA Section 401 permit, and LSAA pursuant to California Fish and Game Code Section 1600 would be necessary, respectively. If USACE, RWQCB, or CDFW determines a permit is required, the permit will be obtained prior to impacts and SCE will comply with all terms and conditions of the agreement. In addition, the USACE, RWQCB, and CDFW shall be provided the opportunity to review and comment on the Habitat Restoration and Mitigation Plan if impacts will occur in an area that may be under their jurisdiction. 4. Mitigation requirements described under number 2 above for impacts to riparian habitat or aquatic features may be satisfied by demonstrating compliance with equal or more effective permit conditions, with approval by the CPUC.	CPUC verifies that a qualified botanist has been consulted to determine the minimum amount of vegetation to be removed, temporary impacts are restored according to the Habitat Restoration and Monitoring Plan, and permanent impacts are mitigated according to methods described in MM BR-3. CPUC may also determine that the above mitigation requirements are satisfied by compliance with permit conditions. CPUC also verifies that USACE, RWQCB, and CDFW are consulted to determine if a permit is necessary.	Prior to Construction – Consult with botanist to determine appropriate amount of vegetation removal. Post-Construction – Restore and/or mitigate temporary and permanent impacts.	All project areas containing riparian habitat and aquatic features.

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MM BR-15: Avian Protection Plan. SCE shall adhere to recommendations published by APLIC (*Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012). In addition, SCE shall develop and implement an Avian Protection Plan according to Avian Protection Plan Guidelines (APLIC and USFWS 2005). The plan shall include provisions to reduce impacts on avian species during operation of the proposed project, and shall provide for the adaptive management of project-related issues. The plan shall be submitted for review to CDFW, USFWS, and the CPUC at least 60 days prior to construction. CPUC approval is required before the plan is implemented.	The plan shall be submitted for review to the CDFW, USFWS, and CPUC at least 60 days prior to construction. CPUC approval is required before the plan is implemented.	Prior to Construction – Develop an Avian Protection Plan. During Construction – Implement the Avian Protection Plan.	Entire project area.
Cultural and Paleontological Resources			
APM-CUL-01: Paleontological Resources Management Plan. A Paleontological Resources Management Plan would be developed for construction within areas that have been identified as having a moderate and high sensitivity for paleontological resources. The Paleontological Resources Management Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology.	CPUC verifies a Paleontological Resources Management Plan is developed by a professional paleontologist.	Prior to Construction – Develop a Paleontological Resources Management Plan. During Construction. Implement the Paleontological Resources Management Plan.	Project areas that have been identified as having a moderate or high sensitivity for paleontological resources.
MM CR-1: Flag and Avoid Known Unevaluated Historic Sites. Prior to commencement of any construction or construction-related activities within 50 feet of the mapped boundaries of (1) the historic-era debris and concrete structure at site P-19-186889 and (2) the concrete footings and shack at site SAY-S-1, a qualified CPUC-approved archaeologist shall erect flagging to create a 50-foot buffer around these resources. Flagging shall be in a bright, easily visible color, and signs shall be posted at the perimeter of the flagged areas on all sides to indicate that construction equipment, materials, and personnel shall stay out of the flagged areas. Flagging and signage shall stay in place until all construction activities within 50 feet of the resources has been completed.	CPUC verifies an archaeologist has erected flagging at appropriate locations.	Prior to Construction	All project areas where construction activities are occurring within 50 feet of the mapped boundaries of (1) the historic-era debris and concrete structure at site P-19-186889 and (2) the concrete footings and shack at site SAY-S-1.
MM CR-2: Worker Training for Cultural and Paleontological Resources. Prior to commencement of any project-related construction activities, all SCE, contractor, and subcontractor project personnel shall receive training regarding:	CPUC verifies all SCE, contractor, and subcontractor project personnel have received worker	Prior to Construction	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Appropriate work practices necessary to effectively implement the APMs and mitigation measures and to comply with the applicable environmental laws and regulations. • The potential for exposing subsurface cultural resources and paleontological resources. • How to recognize possible buried resources. This training shall include a presentation of: • Procedures to be followed upon discovery or suspected discovery of historic or archaeological materials, including Native American remains and their treatment. • Procedures to be followed upon discovery or suspected discovery of paleontological resources. • Actions that may be taken in the case of violation of applicable laws.	training for cultural and paleontological resources.		

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM CR-3: Previously Unidentified Cultural Resources. If a previously unknown cultural resource is discovered during project construction activities, work shall be halted within 100 feet of the resource, and protective barriers shall be installed along with signage identifying the area as an "environmentally sensitive area." Entry into the area shall be limited to authorized personnel, and the CPUC-approved cultural resources specialist/qualified archaeologist, SCE, and the CPUC shall be notified immediately. Preservation in place (i.e., avoidance) is the preferred method of mitigation for impacts on cultural resources and shall be required to mitigate impacts to previously undiscovered resources unless the CPUC-approved cultural resources specialist/qualified archeologist and SCE determine~~s~~ that another method would provide superior mitigation of impacts to the resource. If the resource can be completely avoided, no additional mitigation is necessary. If the resource cannot be completely avoided, the CPUC-approved cultural resources specialist/qualified archaeologist and SCE shall follow the procedures delineated below for resources where it is not known whether the resource is historical. If an unanticipated resource is avoided, it shall nonetheless be recorded on DPR 523 forms, which shall be filed at the Eastern Information Center. • **Determination if a resource is an historical resource.** The CPUC-approved cultural resources specialist/qualified archaeologist and SCE, in consultation with the CPUC, shall determine if there is a potential for the resource to be a historical resource. If there is no potential for the resource to qualify as a historical resource, work shall resume after CPUC concurrence. If there is a potential for the resource to be a historical resource, the qualified archaeologist and SCE shall prepare an Evaluation Plan. • **Evaluation Plan.** The resource-specific Evaluation Plan shall detail the procedures to be used to determine if the discovery is an historical resource. The Evaluation Plan shall include sufficient discussion of background and context to allow the evaluation of the resource against the historical resource criteria. It shall include a description of procedures	CPUC verifies that work has been halted and that protective barriers have been installed. CPUC verifies that a Data Recovery Field Memo is prepared and a Data Recovery Report is prepared and submitted to CPUC for review and approval. CPUC shall also verify that all impacted known resources and all unanticipated resources shall be recorded on DPR 523 forms that shall be filed at the Eastern Information Center with the Data Recovery Report. If an Evaluation Plan is needed, CPUC shall verify it has been prepared with appropriate measures.	During Construction	Entire project area.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
to be used in the gathering of information to allow the evaluation. These techniques may include (but are not limited to): excavation, written documentation, interviews, and/or photography. For archaeological resource testing, the Evaluation Plan shall describe the archaeological testing procedures, including, but not limited to: surface collection (if surface artifacts are discovered), test excavations (including type, number, and location of test pits and/or trenches), analysis methods, and reporting procedure. The Evaluation Plan shall be submitted to CPUC for review. Once approved, the Evaluation Plan shall be implemented in the field. The report resulting from this work shall include evaluation of the discovery, based on the significance criteria set forth in the Evaluation Plan, indicating if it is an historical resource. If the discovery is not found to be an historical resource, and CPUC concurs with that determination, protective barriers may be removed, and work may proceed in the area of the discovery. If the discovery is determined to be an historical resource, SCE shall prepare a Data Recovery Plan. • **Data Recovery Plan.** Data Recovery Plans for historical resources that cannot be fully avoided shall be prepared in accordance with CEQA Guidelines section 15126.4(b)(3)(C) and PRC section 21083.2, as applicable. The Data Recovery Plan shall outline how the recovery of data from the resource will mitigate impacts to that resource to below a level of significance. The Data Recovery Plan shall describe the level of effort, including numbers and kinds of excavation units to be dug, excavation procedures, laboratory methods, samples (e.g., pollen, sediment, as appropriate) to be collected and analyzed, analysis techniques that will yield information relevant to the aspects of the site that make it an historical resource, and reporting procedure. This plan shall be submitted to the CPUC for review and approval. Once approved, the applicant shall implement the approved plan. Once the data recovery field work is complete, a Data Recovery Field Memo shall be prepared. • **Data Recovery Field Memo.** Following implementation of the Data Recovery Plan, the Data Recovery Field Memo shall be prepared. The Data Recovery Field Memo shall briefly describe the data recovery procedures in the field and summarize (at a field catalog level) the materials recovery.			

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
The Data Recovery Field Memo shall also identify the number and kind of samples recovered that are appropriate for special analyses, including radiocarbon dating, obsidian sourcing, pollen analysis, microbotanical analysis, and others, as applicable. The Data Recovery Field Memo shall be submitted to CPUC for review and approval. Once the Data Recovery Field Memo has been approved, protective barriers may be removed, and work may proceed in the area of the discovery. A Data Recovery Report shall then be prepared. • **Data Recovery Report.** Within 90 days of submittal of the Data Recovery Field Memo, a Data Recovery Report shall be prepared presenting the results of the data recovery program, including a description of field methods, location and size of excavation units, analysis of materials recovered (including results of any special analyses conducted), and conclusions drawn from the work. The Data Recovery Report shall also indicate where artifacts, samples, and documentation resulting from the data recovery program will be curated. The curation facility shall meet the requirements of 36 Code of Federal Regulations 79. The Data Recovery Report shall be submitted to the CPUC for review and approval. Once approved, the Data Recovery Report shall be filed with the Eastern Information Center. All impacted known resources and all unanticipated resources shall be recorded on DPR 523 forms that shall be filed at the Eastern Information Center with the Data Recovery Report.			
MM CR-4: Paleontological Resources Monitoring. Prior to the start of construction, the applicant shall retain a qualified paleontologist. The qualified paleontologist shall be approved by the CPUC and shall monitor all ground-disturbing activities that take place within areas that have a moderate to high potential to contain paleontological resources, consistent with designations shown in Table 4.4-7. The Paleontological Resources Management Plan (APM-CUL-01) shall show a map of areas requiring monitoring consistent with Table 4.4-7. The paleontological monitor shall have the authority to halt construction in the vicinity of any potential paleontological resource finds to begin implementation of MM CR-5.	SCE shall retain a qualified paleontologist, approved by the CPUC.	During Construction	Construction areas with a moderate to high potential to contain paleontological resources.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM CR-5: Follow Paleontological Resource Discovery Protocol. In the case that a previously unknown paleontological resource is discovered during construction activities, all work within 15 meters of the resource shall be stopped, and the CPUC-approved paleontologist shall determine, after consulting with SCE, whether the resource can be avoided. If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, the paleontologist shall determine whether the resource is unique under Part V of CEQA Guidelines Appendix G. A paleontological resource shall be considered unique if it meets the definition of a significant paleontological resource under the 2010 Society of Vertebrate Paleontology *Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources* definition: Significant paleontological resources are fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogentic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years). Substantiation of the uniqueness conclusion shall be provided to the CPUC for review and approval. If the resource is determined not to be unique, work may commence in the area. If the resource is unique, then work shall remain stopped, and the approved paleontologist shall consult with the applicant and the CPUC regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation in place, i.e., avoidance, is the preferred method of mitigation for impacts to paleontological resources and shall be required to mitigate impacts to previously undiscovered resources unless the CPUC-approved paleontologist determines that another method would provide superior mitigation of impacts to the resource. Other methods include ensuring that the fossils are recovered, prepared, identified, catalogued, and analyzed according to current	CPUC verifies that the Paleontological Resource Discovery Protocol is followed, including CPUC review and approval of the uniqueness conclusion for the resource and the methods for recovery of the resource.	During Construction	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
professional standards under the direction of a qualified paleontologist. Methods of recovery, testing, and evaluation shall adhere to current professional standards for recovery, preparation, identification, analysis, and curation, such as the 2010 Society of Vertebrate Paleontology *Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources*. Work can commence following recovery and CPUC approval.			
MM CR-6: Unanticipated Discovery of Human Remains. In the event that human remains or suspected human remains are identified, SCE shall comply with California law, including, but not limited to, the following provisions: CEQA Guidelines section 15064.5(e); PRC sections 5097.94, 5097.98, and 5097.99; and California Health and Safety Code section 7050.5. These laws require Native American consultation for Native American burial sites. The area where the remains are identified shall be flagged off, and all construction activities within 165 feet (50 meters) of the find shall immediately cease. The CPUC, the CPUC-approved cultural resources specialist/archaeologist, SCE, and any other appropriate agency shall be immediately notified, and the cultural resources specialist/archaeologist shall examine the find. If the cultural resources specialist/archaeologist determines that there may be human remains, SCE shall immediately contact the Medical Examiner at the Los Angeles County Coroner's office. The Medical Examiner has two working days to examine the remains after being notified by SCE. If the Medical Examiner believes the remains are Native American, he/she shall notify the NAHC within 24 hours. The NAHC will immediately notify the person it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the area of the property shall be secured from further disturbance. If there are disputes between the landowners and the MLD, the NAHC shall mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative shall reinter the remains and associated grave goods and funerary objects in an	In the event that human remains are identified, the CPUC, the CPUC-approved cultural resources specialist/archaeologist, SCE, and any other appropriate agency shall be immediately notified. CPUC shall verify that SCE immediately contacts the medical examiner at the Los Angeles County Coroner's Office.	During Construction	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
area of the property secure from further disturbance. The location of any reburial of Native American human remains shall not be disclosed to the public and shall not be governed by public disclosure requirements of the California Public Records Act, California Government Code § 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r).			
Geology, Soils, and Minerals			
MM GEO-1: Geotechnical Investigation. The applicant will conduct a geotechnical investigation for the proposed project and prepare a geotechnical report documenting the results of the investigation. The geotechnical investigation shall assess the potential for liquefaction, landslides, lateral spreading, seismic ground shaking, and expansive soil. The geotechnical report shall make recommendations of engineering and design measures to incorporate into the proposed project, determined appropriate by a California-licensed Geotechnical Engineer or Certified Engineering Geologist, to mitigate impacts associated with liquefaction, landslides, lateral spreading, seismic ground shaking, and expansive soils. Measures that may be used to minimize impacts could include, but are not limited to: • *Liquefaction:* stabilization of fills, retaining walls, slope coverings, removal of unstable materials, avoidance of highly unstable areas, construction of pile foundations, and/or ground improvements of liquefiable zones. • *Landslides and lateral spreading:* retaining walls, excavation of unstable materials, avoidance of highly unstable areas. • *Seismic ground shaking:* energy dissipating devices, bracing, bolting of foundations. • *Expansive soil:* excavation of expansive soil, draining water away from expansive soils, ground-treatment processes. SCE shall provide documentation to the CPUC prior to construction that demonstrates these measures have been incorporated into project design.	SCE shall provide documentation to the CPUC prior to construction that demonstrates these measures have been incorporated into project design.	Prior to Construction	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
Hazards and Hazardous Materials			
MM HZ-1: Hazardous Materials Business Plan. A Hazardous Materials Business Plan (HMBP) shall be submitted to the CPUC and electronically through the California Environmental Reporting System (CERS) for any hazardous materials stored on-site over threshold quantities (55 gallons, 200 cubic feet, or 500 pounds). The plan shall include information on: • Hazardous materials stored at the Mesa Substation over threshold quantities. • A site map with key emergency information, including internal access roads, adjacent public streets, sewer drains, emergency response equipment, and access/egress points. • Emergency response plans for release and threatened release of the covered materials. The HMBP must be submitted at least 30 days prior to storage of covered hazardous materials via the CERS. A receipt, showing that the agency received the plan must be submitted to the CPUC no less than 15 days prior to storage of covered hazardous materials.	The Hazardous Materials Business Plan and its approval by the Los Angeles Certified Unified Program Agency must be submitted to the CPUC at least 30 days prior to storage of covered hazardous materials.	Prior to Construction	Wherever hazardous materials over 55 gallons, 200 cubic feet, or 500 pounds are stored.
MM HZ-2: Hazardous Materials Training. Prior to construction, the applicant will prepare and implement a worker environmental awareness program (WEAP) for CPUC review and approval that includes: • Instruction regarding the location of Material Safety Data Sheets, as well as proper labeling, storage, use, transport, and disposal of hazardous materials. • Information on common contaminants that could be uncovered in the proposed project area and instruction regarding appropriate procedures if potentially contaminated soil is present. • Procedures for spill response under the SPCC (MM HZ-3) including notification to appropriate personnel, including the Spill Response	CPUC verifies Hazardous Materials Training has been prepared and administered, and that SCE maintains records documenting attendees at each training.	Prior to Construction.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
Coordinator in case of a hazardous materials spill or leak from equipment, or upon the discovery of soil or groundwater contamination. • Instruction on individual responsibilities under the Clean Water Act, the project SPCC, the project SWPPP, and site-specific BMPs. • Instruction on compliance with OSHA regulations and procedures if landfill gas is encountered during excavations. The applicant will maintain records documenting attendees at each training.			
MM HZ-3: Spill Prevention, Control, and Countermeasure Plan. SCE shall prepare a site-specific SPCC plan that identifies spill response and prevention measures and BMPs. SCE shall indicate site-specific physical conditions that could exacerbate spills, such as drainages to the nearest water bodies. SCE shall name a representative that will be responsible for verifying that construction and operation activities adhere to the SPCC, including implementation of BMPs. SCE shall submit the SPCC to CPUC at least 30 days prior to delivery of any additional transformer oil to the site.	SCE shall name a representative that will be responsible for verifying that construction and operation activities adhere to the SPCC plan, including implementation of BMPs. SCE shall submit the SPCC to CPUC at least 30 days prior to construction for review and approval.	Prior to Construction – Prepare a SPCC plan. During and Post-construction – Implement the SPCC plan.	Entire project area.
MM HZ-4: Contaminated Soil Contingency Plan. Prior to construction, the applicant will submit a Contaminated Soil Contingency Plan to the CPUC for review and approval. The plan will include practices that are consistent with the California Title 8 and Occupational Safety and Health Administration (Cal-OSHA) regulations and will outline steps that would be implemented if contaminated soils are encountered. The objective of the plan will be to minimize risk to the public and to the environment resulting from exposure to and disturbance of contaminated soils. At a minimum, the plan would include procedures for the following steps: • Identifying potentially impacted soil; • Establishing a no-work zone for potentially contaminated areas; • Assessing potentially impacted soil; • Notifying appropriate agencies,	Prior to construction, the applicant will submit a Contaminated Soil Contingency Plan to the CPUC for review and approval. During construction, CPUC shall verify that an appropriately trained construction personnel, under the supervision of a California licensed registered geologist or professional engineer, will be present to monitor soil conditions during all earthmoving activities.	Prior to Construction – Develop a Contaminated Soil Contingency Plan. During Construction – Implement the Contaminated Soil Contingency Plan.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Cleanup procedures; • Impacted soil storage; • Verification sampling; and, • Impacted soil characterization and disposal. During construction an appropriately trained construction personnel, under the supervision of a California licensed registered geologist or professional engineer, will be present to monitor soil conditions during all earthmoving activities. If potentially contaminated soils are encountered during construction, the applicant would implement the Contaminated Soil Contingency Plan to assess the soils and to determine appropriate procedures based on the nature of the contamination, which may include avoidance or collection and analysis to determine appropriate disposal or treatment options.			
MM HZ-5: Well Management Plan. Prior to construction, the applicant will prepare and submit to CPUC a Well Management Plan in coordination with OII Landfill and the U.S. EPA in order to prevent contamination of groundwater and subsurface soil. The plan will include procedures for well decommissioning or protection for all monitoring wells located within the footprint of the proposed project. The plan will be reviewed and approved by CPUC prior to construction. Proper well decommissioning or protection/avoidance measures would be implemented prior to beginning other ground disturbing activities within the proposed Mesa Substation site area The Well Management Plan would address the following: • Identification of wells that would be avoided during construction and wells that would be decommissioned, • Well decommissioning schedule, • Well decommissioning procedures, • Procedures for the protection of wells that are to be avoided during construction,	Prior to construction, the applicant will prepare and submit to CPUC a Well Management Plan in coordination with OII Landfill and the EPA. The plan will be reviewed and approved by CPUC prior to construction.	Prior to Construction	All project areas containing monitoring wells.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Procedures for granting access to OII Landfill's monitoring wells during construction activities. Procedures should address compliance to the proposed project's APMs and MMs.			
Hydrology and Water Quality			
MM HY-1: Stormwater Pollution Prevention Plan. The applicant will obtain coverage for the project under the Construction General Permit (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The applicant will prepare a SWPPP to reduce the potential for water pollution and sedimentation from construction. BMPs to be included in the SWPPP that must be submitted to the SWRCB shall include, but are not limited to, the following: • The applicant shall not stockpile brush, loose soils, excavation spoils, or other similar debris material within sensitive habitats. • If visible dust is present during construction activities, standard dust suppression techniques (e.g., water spraying) will be used in all ground disturbance areas. • During construction activities, measures would be in place to ensure that contaminants are not discharged from construction sites. The SWPPP would define areas where hazardous materials and trash would be stored; where vehicles would be parked, fueled and serviced; and where construction materials would be stored. • Runoff, sedimentation, and erosion would be minimized through the use of BMPs such as water bars, silt fences, staked straw bales, wattles, and mulching and seeding of all disturbed areas. These measures will be designed to minimize ponding, eliminate flood hazards, and avoid erosion and siltation into any creeks, streams, rivers, or bodies of water, and to preserve roadways and adjacent properties. BMPs would be included for areas where helicopters would be landed, fueled, and serviced or used for construction activities. • Equipment storage, fueling, and staging areas would be located in upland sites away from riparian areas or other sensitive habitats. These designated areas would be located in such a manner as to prevent any runoff from entering sensitive habitat. Where vehicle maintenance	Verification of Construction General Permit coverage approval and the approved SWPPP(s) will be provided to the CPUC at least 30 days prior to start of construction.	Prior to Construction – Prepare an SWPPP. During Construction – Implement the SWPPP.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
(excluding fueling) cannot be avoided in areas outside those previously specified, these maintenance activities shall be performed at least 150 feet from all aquatic resources or as specified by agency permits, on an impermeable bladder or tarp specified for such maintenance activities. Project-related spills of hazardous materials would be cleaned up immediately and contaminated soils removed to approved disposal areas. • Implement measures such as sandbags, silt screens, cleanup of spills of hazardous materials, and cleanup of sediment to prevent polluted (with sediment or hazardous materials) runoff from work areas in paved streets from entering the storm drain system • Implement measures such as silt screens, cleanup of spills of hazardous materials, cleanup of sediment, secondary containment for hazardous materials, and avoidance of activities that disturb sediment or have a high potential for hazardous materials spills immediately before or during rain to prevent polluted (with sediment or hazardous materials) runoff from staging areas from draining into water ways such as washes, drainages, and ditches and from entering municipal storm drain systems. Verification of Construction General Permit obtained from the State Water Resources Control Board will be provided to the California Public Utilities Commission (CPUC) at least 30 days prior to start of construction. Updated SWPPPs will be kept onsite during construction and provided to the CPUC on request during construction.			
MM HY-2: Compliance with WDRs. Work in waters of the state shall be conducted in conformance with WDRs obtained for the proposed project. Mitigation measures shall be implemented in accordance with WDRs, and they may include avoidance, reduction, or compensatory measures. Groundwater extracted as a result of dewatering during construction shall not be discharged to Waters of the State unless such activities are covered by a WDR. Extracted groundwater shall be disposed of in one of the following manners in the absence of a WDR:	CPUC verifies that all work within waters of the state are conducted in conformance with WDRs, and that appropriate mitigation measures are implemented in accordance with WDRs.	During Construction	All areas where construction would occur within waters of the state.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Discharge to an upland area where it will not enter Waters of the State but would instead evaporate or infiltrate. • Use for dust control. • Use for irrigation water. • Use for other construction needs. • Dispose of at a licensed facility if water is suspected of being contaminated or degraded.			
MM HY-3: Construction Drainage Plan. SCE shall prepare and implement a Drainage Plan, or incorporate the requirements of this mitigation measure into the SWPPP, which ensures runoff during construction activities at the Mesa Substation site will not exceed drainage capacity of the storm water system and other drainage facilities. Measures that can be employed can include: • Constructing the detention basin earlier in construction. • Constructing temporary detention basins on site. • Creating infiltration areas to limit runoff that enters the storm water system. If the SWPPP is not used to satisfy the conditions of this mitigation measure, SCE shall submit the plan to Monterey Park and CPUC for review and approval prior to beginning construction activities at the substation site.	SCE shall submit the plan to Monterey Park and CPUC for review and approval prior to beginning construction activities at the substation site.	Prior to Construction – Prepare a Drainage Plan. During Construction – Implement the Drainage Plan.	Mesa Substation site
MM HY-4: Detention Basin Design. SCE shall design the detention basin on the proposed Mesa Substation site in accordance with the Los Angeles County Department of Public Works Hydrology Manual and in compliance with the City of Monterey Park's requirements (LACDPW 2006). The Hydrology Manual contains techniques to calculate runoff flow rates and volumes based on Los Angeles County's historic precipitation and runoff. As applicable, the detention basin shall be designed in accordance with the Los Angeles County Department of Public Works Low Impact Development Standards Manual (LACDPW 2014).	CPUC shall verify that the detention basin is designed in accordance with the Los Angeles County Department of Public Works Hydrology Manual prior to beginning construction of the proposed project.	Prior to Construction	Mesa Substation site

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM HY-5: Dam Failure Evacuation Training. As part of the Worker Environmental Awareness Program, SCE shall train construction workers on evacuation routes in the event of dam failure. Workers to be trained shall include those located in the dam inundation areas of the Garvey Reservoir south dam, Eaton Canyon Dam, Garvey Reservoir north dam, and Santa Fe Dam.	CPUC shall verify that SCE trains all construction workers located in the dam inundation areas of the Garvey Reservoir south dam, Eaton Canyon Dam, Garvey Reservoir north dam, and Santa Fe Dam on evacuation routes in the event of dam failure prior to construction of the proposed project.	Prior to Construction	Work located within dam inundation areas of the Garvey Reservoir south dam, Eaton Canyon Dam, Garvey Reservoir north dam, and Santa Fe Dam.
Noise and Vibration			
MM NV-1: Noise Control Plan. Prior to the start of construction, the applicant shall prepare a Noise Control Plan to ensure that project construction noise does not: • Increase ambient noise levels by more than 10 dBA (8-hour L_{eq}), or • Exceed the noise level specified in the applicable jurisdiction's noise ordinance. The Noise Control Plan measures shall be selected based on the specific equipment used activity conducted in specific locations, and proximity to sensitive noise receptors. The applicant shall submit the Noise Control Plan to the CPUC at least 30 days prior to the start of construction for review and approval. Measures that may be included in the Noise Control Plan to reduce noise levels by 10 dBA or to the noise level specified in the applicable jurisdiction's noise ordinance are: • Temporarily and safely install and maintain absorptive noise control barriers in the perimeter of construction sites and/or between stationary construction equipment and sensitive noise receptors when located within 200 feet of noise-intensive equipment operating more than 4 hours a day. The applicant shall notify all residents located within 50 feet of the absorptive barriers.	Verify identification of a Construction Relations Officer and mailing of notices at least 30 days prior construction. Review monthly reports to the CPUC. Verify implementation of noise control measures.	Prior to Construction – Prepare a Noise Control Plan. During Construction – Implement the Noise Control Plan.	Entire project area.

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Limit heavy-equipment activity adjacent to residences or other sensitive receptors to the shortest possible period required to complete the work activity. • Ensure that proper mufflers, intake silencers, and other noise reduction equipment are in place and in good working condition. • Maintain construction equipment according to manufacturer recommendations. • Minimize unnecessary construction equipment idling. • Reduce noise from back-up alarms (alarms that signal vehicle travel in reverse) in construction vehicles and equipment by providing a layout of construction sites that minimizes the need for back-up alarms and use flagmen to minimize the time needed to back up vehicles. • When possible, use construction equipment specifically designed for low noise emissions (e.g., equipment that is powered by electric or natural gas engines instead of diesel or gasoline reciprocating engines). • Where practical, locate stationary equipment such as compressors, generators, and welding machines away from sensitive receptors. The Noise Control Plan shall detail the frequency, location, and methodology for noise modeling and monitoring prior to and during various construction and restoration activities to ensure that generated noise levels do not exceed 10 dBA above existing ambient noise levels, or the applicable jurisdiction noise standards. These methods shall include monitoring noise levels at the boundary of construction areas and using industry-standard noise modeling techniques to predict noise levels at adjacent sensitive receptors. If modeled levels exceed the greater than 10 dBA above existing ambient noise or applicable ordinance threshold, noise monitoring will be conducted to verify model results. The Noise Control Plan shall detail the actions and procedures that the applicant shall implement to mitigate impacts in the event that monitoring detects noise levels that have exceeded the criteria specified in this			

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APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
EIR. Noise level measurements shall be conducted in compliance with the City of Monterey Park, City of Montebello, City of Commerce, City of Bell Gardens, City of Pasadena, and Los Angeles County requirements, as applicable. The Noise Control Plan shall designate a Construction Relations Officer who is readily available to answer questions or respond to complaints during periods of construction or restoration. The applicant shall send pre-construction notifications to sensitive receptors located within 100 feet of construction activities at least 30 days prior construction. The notification shall include a phone number for the public to contact the Construction Relations Officer. Additionally, each construction site shall include clearly visible signs with the Construction Relations Officer's public phone number. The applicant shall submit monthly reports to the CPUC summarizing the complaints submitted to the Construction Relations Officer. The summary reports shall describe how each complaint was addressed, if and when it was resolved, and available contact information for the member of the public who submitted the complaint.			
MM NV-2: Operational Substation Noise Monitoring As soon as Mesa Substation is fully operational, the applicant shall conduct noise measurements to ensure that the operational noise levels from the substation transformers do not exceed the City of Monterey Park's nighttime noise standard (50 dBA or actual measured median ambient noise level, whichever is greater) at the closest receptor. If the nighttime noise standard is exceeded, the applicant shall implement engineering solutions, including, but not limited to, barrier walls around the transformer, sound absorbing panels, and/or noise cancellation methods until the project does not exceed the nighttime noise standard. SCE must submit the noise measurements in the form of a memorandum to the CPUC within two weeks of measurement. Reports shall be submitted until the CPUC verifies that operation noise does not exceed the City of Monterey Park's nighttime noise standard.	SCE must submit the noise measurements in the form of a memorandum to the CPUC within two weeks of measurement. Reports shall be submitted until the CPUC verifies that operation noise does not exceed the City of Monterey Parks' nighttime threshold.	Post-construction	Mesa Substation site

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM NV-3: Noise from Helicopter Operations. For all construction activities that would include helicopter operations, SCE shall provide at least one week's advance notice to all property owners within 660 feet of the proposed helicopter operation areas. The announcement would state that the use of helicopters is anticipated and would provide the start date, anticipated completion dates, hours of helicopter usage, and a telephone contact number for questions or complaints during construction. In addition, helicopters would maintain a height of at least 500 feet when passing over residential areas, as well as a lateral distance of at least 500 feet from all schools and hospital buildings, except when they are at construction areas or actively assisting with construction activities.	The CPUC shall verify that notice to all property owners within 660 feet of the proposed helicopter operation areas is provided at least one week prior to helicopter operation.	Prior to Construction – provide notice at least 7 days prior to helicopter operation.	All project areas in which helicopter operations would occur.
MM NV-4: Positioning of Helicopter Landing and Takeoff Areas. SCE shall position helicopter landing and takeoff areas in Staging Yards 1, 2, and 3 as far away as feasible from sensitive receptors, while not sacrificing the safety of helicopter operations due to hazards (e.g., transmission lines) in and around the staging yards. SCE must submit helicopter locations to the CPUC for review and approval at least 30 days prior to use of the helicopter location.	SCE must submit helicopter locations to the CPUC for review and approval at least 30 days prior to use of the helicopter location.	Prior to Construction	Helicopter take-off and landing areas.
MM NV-5: Noise Notification and Coordination for Whittier Narrows Natural Area. The applicant shall provide notice to the Whittier Narrows Natural Area at least 30 days prior to construction activities occurring in that area to alert nearby users of the construction activities and give them the opportunity to avoid the noise. The notice shall include dates, times, and descriptions of construction activities, in addition to directions to at least two comparable alternative nearby recreational facilities. The applicant shall also coordinate with the Whittier Narrows Natural Area to ensure that activities causing an increase in noise of over 10 dBA above ambient noise levels do not occur in the Whittier Narrows Natural Area during any planned special events. SCE shall provide documentation of the notice and coordination to the CPUC at least 20 days prior to construction.	SCE shall provide documentation of the notice and coordination to the CPUC at least 20 days prior to construction. The CPUC shall verify that notice has been provided to Whittier Narrows at least 30 days prior to construction and that coordination has occurred such that noise levels do not violate identified maximums.	Prior to Construction	Whittier Narrow Natural Area
Public Services and Utilities			
MM PS-1: Relocation Agreement with Metropolitan Water District. Prior to construction that would take the MWD's 72-inch Middle Feeder Pipeline out of service, the applicant shall reach an agreement with the MWD that will identify an alternate alignment that crosses the project site. This relocation agreement will enable the MWD to maintain reliable deliveries of treated	SCE shall submit to the CPUC information from the MWD confirming that relocation of the pipeline will not result in inability to adequately serve customers.	Prior to Construction	Main project area.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
water to its member agencies during relocation of the pipeline. SCE shall submit to the CPUC information from the MWD confirming that relocation of the pipeline will not result in inability to adequately serve customers. SCE shall submit this documentation at least 30 days prior to the pipeline being taken out of service.	SCE shall submit this documentation at least 30 days prior to the pipeline being taken out of service.		
Traffic and Transportation			
MM TT-1: Traffic Control Plan. SCE shall prepare and implement a Traffic Control Plan consistent with the California Joint Utility Traffic Control Manual. SCE shall submit the Traffic Control Plan to Caltrans, the City of Monterey Park, and the City of Montebello for review and comment prior to submitting it to the CPUC for review and approval at least 60 days prior to the start of construction. The Traffic Control Plan shall include at a minimum, measures to ensure that: 1. Significant impacts to affected intersections during the AM or PM peak hours (and during the specified phase) are reduced to less than significant levels, i.e., reduce the V/C increase resulting from the proposed project at each identified intersection to at or below the applicable threshold. Primary measures may include: • Limiting project-related heavy truck trips during peak hours (e.g., through scheduling deliveries outside of peak hours) so as to reduce trips occurring during peak hours; and • Limiting project construction worker vehicle trips during peak hours (e.g., through requiring carpooling) so as to reduce trips occurring during peak hours. 2. Significant impacts on SR 60, Greenwood Avenue, Loveland Street, and other nearby roadways are reduced to less than significant levels, i.e., reduce excessive interruptions in traffic flow resulting from temporary lane closures. Primary measures may include the following: • SCE shall follow recommended considerations of the California Manual on Uniform Traffic Control Devices (CA MUTCD) latest edition, including proper signage, avoiding abrupt changes in geometrics,	A project-specific Traffic Management Plan is prepared by SCE according to provisions identified in this mitigation measure. SCE shall submit the plan for CPUC review and approval at least 60 days prior to the start of construction.	Prior to Construction – Prepare a Peak Period Traffic Management Plan. During Construction – Implement the Peak Period Traffic Management Plan. Post Construction – Repair Roadway Damage	Entire project area.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
reducing traffic volume by using alternate routes scheduling work in off-peak hours, and complying with the Americans with Disabilities Act of 1990; and • No work shall occur in Caltrans ROW until Caltrans issues the encroachment permit and approves the Traffic Control Plan. 3. Significant impacts on Potrero Grande Drive, East Markland Drive, and other nearby roadways are reduced to less than significant levels, i.e., reduce hazards from slow moving vehicles entering and exiting the substation site. Primary measures may include the following: • SCE shall post slow truck warning signage at appropriate locations during truck delivery and exit hours (e.g., along Potrero Grande Drive) when there is a possibility for slow trucks to exit the substation site to warn drivers of slow trucks exiting the substation site onto East Markland Drive and Potrero Grande Drive. Signage shall adhere to the CA MUTCD. 4. Significant impacts to affected roadways used by overweight or oversized vehicles are reduced to less than significant levels, i.e., repair to pre-project conditions any roads or road infrastructure (e.g., curbs and medians) damaged by project-related vehicle traffic. SCE shall comply with local permit conditions related to road damage to reduce impacts to less than significant. Primary measures may include the following: • Documenting roadway conditions with photographs prior to the project along roads identified for heavy vehicle use in the project's Traffic Impact Analysis; and • Taking photographs after the project and after any repairs that document restoration of pre-project pavement conditions. Documentation of original conditions and repair shall be submitted to the CPUC for review and verification within 30 days of repair completion.			

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
5. Significant impacts to local emergency service providers are reduced to less than significant levels, i.e., maintain access for emergency service vehicles. Primary measures may include the following: • Maintaining good public relations by assessing the needs of road users, abutting property owners, and emergency service providers (law enforcement, fire fighters, and medical medical) and cooperating with various news media; • SCE shall notify local emergency service providers (i.e., police departments, ambulance services, and fire departments) of road closures at least one week prior to the closure; • SCE shall notify the emergency service provider of the location, date, time, and duration of closure; and • SCE shall also make provisions to maintain emergency vehicle access at all times in coordination with local emergency service providers, such as keeping metal plates available to cover open trenches. 6. Significant impacts to public transit, pedestrians, and bicyclists are reduced to less than significant levels, i.e., maintain safe conditions for pedestrians and bicyclists during construction of the proposed project. The project shall allow for safe vehicle, bicyclist, and pedestrian passage through construction zones in consideration of basic safety principles to route roadway users through construction zones using roadway geometrics and features and traffic control devices comparable to normal roadway situation as possible. The Traffic Control Plan's level of detail shall be appropriate to the complexity of the project work, and primary measures may include: • Notifying LA Metro and other public transit providers of construction along existing public transit routes. SCE shall work with transit providers to temporarily relocate transit stops during construction, if needed;			

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Providing pedestrians with reasonably safe, convenient, and accessible paths that replicate as nearly as possible the most desirable characteristics of the existing paths (e.g., maintaining sidewalk and bicycle access on at least one side of affected streets during construction); • Laying out plans for notifications and a process for communication with affected transit riders, pedestrians, and bicyclists prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which transit routes, bus stops, sidewalks, and bicycle routes would be affected on which days and for how long), and a toll-free telephone number for receiving questions or complaints; • Posting detour signs during construction of alternative routes for pedestrians and bicyclists, applying the CA MUTCD principles for proper marking, signing, and flagging; and • Installing steel plates over open trenches in inactive construction areas to maintain existing bicycle and pedestrian access after construction hours. 7. Significant impacts to the Whittier Narrows park-and-ride lot are reduced to less than significant levels, i.e., maintain safe entrance and egress from the Santa Anita Avenue entrance. Primary measures may include the following: • SCE shall coordinate with Los Angeles County and the Whitter Narrows Recreation Area so that SCE can provide traffic control for two-way traffic at the Santa Anita Avenue entrance to the Whittier Narrows park-and-ride lot during the Durfee Avenue exit closure. In addition, the Traffic Control Plan shall ensure that:			

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
• Acceptable levels of operation for all transportation modes are provided and routine day and night inspections of the plan's elements are implemented; • Roadside safety is maintained during the life of the project to accommodate disabled vehicles, run-off-the-road incidents, and emergency situations; and • Appropriate field workers and management personnel receive training appropriate to the job decisions each individual is required to make. Specific measures would depend on the final construction schedule and residing location of construction workers. Measures implemented as part of the plan shall not result in exceedance of applicable thresholds as described in this document at other impacted intersections. The plan shall also demonstrate that mitigation would not result in V/C to exceed thresholds at significantly impacted and non-significantly impacted roads and intersections. Roadway, highway, and lane closure plans shall be prepared and implemented as required and in coordination with the applicable local and Caltrans jurisdictions. Appropriate advance notifications shall be made to the affected jurisdictions and affected property owners; copies of all coordination and notification shall be provided to the CPUC. The plan shall describe locations and durations of: • Full road closures • Lane closures • Bicycle lane closures • Sidewalk or pedestrian path closures • Transit stop closures • Parking lot and Park-N-Ride lot closures To the extent that compliance with applicable permit requirements, e.g., obtaining required encroachment permits from Caltrans and/or other			

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
agencies with jurisdiction over work done within roadways, would reduce identified significant traffic impact(s) consistent with the performance standards set forth in MM TT-1, SCE may submit such permit(s) in lieu of addressing that impact or impacts in the Traffic Control Plan, subject to review and approval by the CPUC prior to the start of construction.			
MM TT-2: Helicopter Lift Plan. SCE's helicopter contractor shall coordinate with FAA and obtain FAA-required approvals for helicopter operations. SCE's contractor's submittal shall include a Helicopter Lift Plan for operations within 1,500 feet (457 meters) of a congested area or within 1,500 feet (457 meters) of residences in compliance with 14 CFR 133.33, which requires that flights be conducted so emergency landings and release of external load can be accomplished without safety risks to people or property when operating over congested areas. Measures may include: • Designating who is responsible for equipment inspections • Communication procedures • Establishment of exclusion zones where pedestrians will not be allowed • Training of personnel in safety requirements and procedures The Plan and record of FAA approval shall be provided to the CPUC prior to commencing helicopter operations.	The Plan and record of FAA approval shall be provided to the CPUC prior to commencing helicopter operations.	Prior to Construction	Areas where helicopters will be used within 1,500 feet of residences.
MM TT-3: FAA No-Hazard Determination. SCE shall obtain a determination of no-hazard from the FAA when notification under 14 CFR 77 is required for: • Use of construction equipment, such as cranes; and • Installation of structures, such as lattice steel towers. SCE shall provide documentation of the FAA finding to the CPUC prior to the use of equipment or installation of structures that require notification under 14 CFR 77.	SCE shall provide documentation of the FAA finding to the CPUC prior to the use of equipment or installation of structures that require notification under 14 CFR 77.	Prior to Construction	All project areas where construction equipment, such as cranes, and structures, such as steel lattice towers, are being installed.

Table 5-1 Final Mitigation Monitoring, Compliance, and Reporting Program

APMs and Mitigation Measures	Monitoring Requirements	Timing	Location
MM TT-4: Pasadena City College Community Education Center Parking. If proposed project work at the Goodrich Substation would result in parking spot closures at the Pasadena City College Community Education Center parking lot, SCE shall coordinate scheduled closures with the Pasadena City College Community Education Center on the following: • The dates of parking spot closures; and • The number of parking spots that would be closed. SCE shall submit documentation to the CPUC 30 days prior to Community Education Center parking spot closure demonstrating coordination with the Pasadena City College Community Center and concurrence from the Pasadena City College Community Education Center that there will be sufficient parking spots to accommodate SCE's work and the Pasadena City College Community Education Center's parking needs.	SCE shall submit the letter to the CPUC 30 days prior to Community Education Center parking spot closure.	During Construction	Community Education Center parking lot

Attachment A

Project and Emergency Contacts

Attachment B

Site Inspection Form

Mesa 500-kV Substation Project
CPUC Site Inspection Form

Project:	Mesa 500-kV Substation Project	Date:	
Project Proponent:	Southern California Edison	Report #:	
Lead Agency:	California Public Utilities Commission	Monitor(s):	
CPUC PM:	Lisa Orsaba, Energy Division	AM/PM Weather:	
E & E CM:	Jenny Vick	Start/End time:	
Project NTP(s):			

SITE INSPECTION CHECKLIST

WEATP Training	Yes	No	N/A
Has WEAP training been completed by all new hires (construction and monitors)?			
Erosion and Dust Control (Air and Water Quality)			
Have temporary erosion and sediment control measures been installed?			
Are erosion and sediment control measures properly installed and functioning?			
Is mud tracked onto paved public roadways cleaned up in accordance with the project's SWPPP?			
Is dust control being implemented (i.e., access roads watered, haul trucks covered, streets cleaned on a regular basis)?			
Are work areas being effectively watered prior to excavation or grading?			
Is excessive fugitive dust leaving the work area?			
Equipment			
Are all vehicles observed maintaining a speed limit of 15 mph on unpaved roads?			
Are all vehicles/equipment observed arriving onsite clean of sediment or plant debris?			
Are vehicles/equipment turned off when not in use?			
Work Areas			
Is vegetation disturbance within work areas minimized?			
Is exclusionary fencing or flagging in place to protect sensitive biological or cultural resources?			
Are vehicles, equipment, and construction personnel staying within approved work areas and on approved roads?			
Are all excavations and trenches covered at the end of the day?			

Are ramps installed at 100-foot intervals with ramps not exceeding 2:1 slopes?			
Biology			
Have preconstruction surveys been completed for biological (wildlife, nesting birds, coastal California gnatcatcher, least Bell's vireo) resources as appropriate?			
Are biological monitors present onsite?			
Are appropriate measures in place to protect sensitive habitat and/or drainages (i.e., flagging, signage, exclusion fencing, biological monitor, appropriate buffer distance enacted)?			
Have wildlife been relocated from work areas?			
Have impacts occurred to adjacent habitat (sensitive or non-sensitive)?			
Did you observe any threatened or endangered species? List:			
Are there wetlands or water bodies present near construction activities?			
Have there been any work stoppages for biological resources?			
Cultural and Paleontological Resources			
Are identified cultural/paleo resources that will not be relocated/salvaged clearly marked for exclusion?			
Are archaeological and paleontological monitors onsite if needed?			
Are appropriate buffers maintained around sensitive resources (e.g. cultural sites)?			
Have there been any work stoppages for cultural/paleo resources?			
Hazardous Materials			
Are hazardous materials stored appropriately?			
Are procedures in place to prevent spills and accidental releases?			
Are appropriate fire prevention and control measures in place?			
Is contaminated soil properly handled or disposed of, if applicable?			
Work Hours and Noise			
Are night lighting reduction measures in place, as needed?			
Is construction occurring within approved hours?			
Are noise control measures in place within 200 feet of sensitive receptors as needed?			

AREAS MONITORED (i.e., structure numbers, yards, or substations)
DESCRIPTION OF OBSERVED ACTIVITIES (i.e., mitigation measures of particular focus or concern, construction activity, any discussions with first-party monitors or construction crews)
MITIGATION MEASURES VERIFIED (Refer to MMCRP, e.g., MM BR-9. Report only on MMs pertinent to your observations today)
RECOMMENDED FOLLOW-UP (i.e., items to check on next visit, minor issues to resolve)
COMPLIANCE SUGGESTIONS OR ADDITIONAL OBSERVATIONS (i.e., suggestions to improve compliance on-site, environmental observations of note)

COMPLIANCE SUMMARY

Below please describe any non-compliance issues or new biological/cultural discoveries that have occurred since your last visit. If you observe a non-compliance issue in the field, please note this on the monitoring datasheet, and for non-compliance Level 2 or 3 fill out and submit a separate Non-Compliance Report Form to E & E Compliance Manager. Inform E & E CM of any non-compliance incidents.

☐ New biological or cultural discovery requiring compliance with mitigation measures, permit conditions, etc. If checked, please describe discovery and documentation/verification below.

☐ Non-compliance – Level 1: An action that deviates from project requirements or results in the partial implementation of the mitigation measures, but has not caused, or has the potential to cause impacts on environmental resources. If you checked this box, describe the incident below and follow-up to ensure correction.

☐ Non-Compliance Level 2: An action that deviates from project requirements or mitigation measures that has caused, or has the potential to cause minor impacts on environmental resources. A non-compliance Level 2 situation may occur when Level 1 incidents are repeated, and show a trend toward placing resources at unnecessary risk. If you checked this box, please fill out a Non-Compliance Report.

☐ Non-Compliance Level 3: An action that deviates from project requirements and has caused, or has the potential to cause major impacts on environmental resources. These actions are not in compliance with the APMs, mitigation measures, permit conditions, approval requirements (e.g. minor project changes, notice to proceed), and/or violates local, state, or federal law. Examples include irreparable damage to archaeological sites, destruction of active bird nests, and grading of unapproved vegetated areas. A non-compliance Level 3 may also be issued if Level 2 incidents are repeated. If you checked this box, please fill out a Non-Compliance Report.

☐ Non-compliance issues reported by SCE: Were there any new non-compliance issues reported by SCE monitors since your last visit? If so, describe issues and resolution and include SCE report identification number.

Date	Non-compliance issue and resolution	Relevant Mitigation Measure	NC Report #

PREVIOUS NON-COMPLIANCE ITEMS REQUIRING FOLLOW-UP OR RESOLVED TODAY:

REPRESENTATIVE SITE PHOTOGRAPHS			
Date	Location	Photo	Description

REPRESENTATIVE SITE PHOTOGRAPHS			
Date	Location	Photo	Description

REPRESENTATIVE SITE PHOTOGRAPHS			
Date	Location	Photo	Description

Completed by:	
Firm:	
Date:	

Reviewed by:	
Firm:	
Date:	

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Attachment C

Non Compliance Report Form

Mesa 500-kV Substation Project
Construction Non-Compliance Report

Incident Date:		**Report No.:**	
Date Submitted:		**Location:**	
Level:		**Relevant Plan/Measure:**	
Current Land Use:		**Sensitive Resources:**	

Description of Incident:
Pertinent Plans/Permits/Mitigation Measures:
Proposed Resolution:
Recommended timeline for follow-up:

Approvals	Date	Name (print)	Signature	Comments
CPUC Compliance Manager				
CPUC Compliance Monitor (if applicable)				
CPUC Project Manager (if applicable)				
SCE Environmental Project Manager (if applicable				

Prepared by: _____ **Date:** _____

Non-compliance Level	Example
A Level 1 non-compliance incident is an action that deviates from project requirements or results in the partial implementation of the mitigation measures, but has not caused, nor has the potential to cause impacts on environmental resources.	i. Failure to implement adequate dust control measures resulting in no impact on resources; ii. Improperly installed, repaired, or maintained erosion or sediment control devices (with no resultant harm to sensitive resources or release of sediment to waters); iii. Inadvertent minor incursion into exclusion area resulting in no harm to sensitive biological or cultural resources; iv. Work outside the approved work limits where the incident is within a previously disturbed area, such as a gravel lot
A Level 2 non-compliance incident is an action that deviates from project requirements or mitigation measures and has caused, or has the potential to cause minor impacts on environmental resources.	i. Work without appropriate permit(s) or approval; ii. Failure to properly maintain an erosion or sediment control structure, but the structure remains functional, and results in minor impacts on resources (e.g. water courses); iii. Working outside of approved hours; iv. Repeated documentation of Level 1 incidents
A Level 3 non-compliance incident is an action that deviates from project requirements and has caused, or has the potential to cause major impacts on environmental resources. These actions are not in compliance with the APMs, mitigation measures, permit conditions, approval requirements (e.g. minor project changes, notice to proceed), and/or violates local, state, or federal law.	i. Construction activities occurring in an exclusion zone with direct impacts to sensitive or endangered species, cultural resources, human remains, or an archaeological site; ii. Eminent danger or documented impact to a sensitive or T&E species; iii. Repeated deviations from required mitigation measures/requirements that have been documented as Level 2 (Minor Incidents); iv. Improper installation of erosion or sediment control structures resulting in substantial sedimentation or impacts to water quality or putting sensitive resources at risk;

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Attachment D

Minor Project Change Form

Mesa 500-kV Substation Project
CPUC Minor Project Change Form
[with instructions]

Date Requested: [date that form is submitted to CPUC Compliance Manager]

Report No.: [CPUC Compliance Manager fills in]

Date Approved: [date CPUC Compliance Manager sends the approved form back to applicant]

Approval Agency: [consider whether another agency or municipality must approve the requested change]

Property Owner(s):

Location/Milepost:

Land Use/Vegetative Cover:

Sensitive Resources: [Any resource that could be affected, directly or indirectly, by this action even if mitigation measures will reduce these impacts to less than significant]

Modification From: ☐ **Permit** ☐ **Plan/Procedure** ☐ **Specification** ☐ **Drawing**

☐ **Mitigation Measure** ☐ **Other:**

[What document contained the official workplan, construction description, mitigation measure or engineering drawing for this project component or activity? Include this document title in the description below. Consider whether this change differs from that description].

Describe how project refinement deviates from current project. Include photos.

What to include in this section:

- Original Condition: A concise description of the existing condition as it is originally described and approved (NTP, engineering specifications, FEIR, etc.) – i.e., how did the applicant originally intend to build this/do this?
- Justification for change: A concise description of and justification for the change requested – i.e., what happened to make the change necessary?
    - These descriptions should be detailed enough and include enough background so that a person unfamiliar with the project should be able to follow the narrative about what the original plan was and why the new plan is needed instead.
    - The description should be in layman's terms to the extent possible. Be as specific as possible. The more vague the language, the more conditions may need to be added to account for omissions. Avoid logic leaps.
- Maps & Figures: The exact location(s)/project component(s) the change will affect. Include dimensions, if applicable. A map and/or figure is usually extremely helpful. Make sure the map is at a readable scale. Ideally, the map should be based on the most current project map and show other project components, survey areas, underlying topography, etc.
- Environmental Impact: Demonstrate that the applicant has considered how this change will affect environmental/cultural resources. List MMs, plans, permits, etc. that were reviewed in order to ensure that this change will not result in significant impacts.
    - Include analyses demonstrating that projected impacts will not be significant (e.g., narrative justification, tables, figures, calculations, etc.). Base this analysis on what was previously analyzed in the NTP, FEIR, etc.
- Concurrence: Demonstrate that the applicant has considered whether other agencies, municipalities, utilities, etc. would need to provide concurrence with this MPM. If so, either provide anticipated contact/approval schedule, or provide dates/contact reports/emails with approvals.

Resources:

Biological ☐ No Resources Present ☐ Resources Present ☐ N/A

Previous Biological Survey Report Reference: [Include dates of original "baseline" surveys (from EIR analysis) to prove that the areas/practices were previously analyzed. Include more recent preconstruction sweeps, if applicable, to prove that the applicant has an understanding of what resources are currently present in this new area or could be impacted by this new practice.]

Cultural ☐ No Resources Present ☐ Resources Present ☐ Within Project Component Area

☐ N/A (paved/graveled area or no ground disturbance)

Previous Cultural Survey Report Reference:

Disturbance Acreage Changes: ☐ Yes ☐ No

Original disturbance acreage: New disturbance acreage:

CEQA Section	Applicable	(Y) Define potential impact or (N) briefly explain why CEQA section isn't applicable. If (Y), describe original and new level of impact, and avoidance/minimization measures to be taken.
Geology, Soils, and Seismicity	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	[Add notes to specify whether agency consultation is necessary, and if so, provide brief summary of that consultation.]
Hazardous Materials and Waste	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Hydrology	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Cultural Resources	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Traffic and Circulation	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Air Quality	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Noise and Vibration	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Visual Resources	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	
Vegetation and Wildlife	☐ Y ☐ N	
Agency Consultation?	☐ Y ☐ N	

Approvals	Date	Name (print)	Signature	
Southern California Edison Environmental Project Manager				☐ Reviewed
CPUC Project Manager				☐ Approved ☐ Approved with conditions (see below) ☐ Denied

For CPUC Compliance Manager Use Only		
☐ **Refinement Approved**	☐ **Refinement Denied**	☐ **Beyond Authority**

Conditions of Approval or Reason for Denial:

Prepared by: **Date:**

Minor Project Refinement Definitions

Project refinements are strictly limited to minor changes that will not trigger less restrictive or new discretionary permit requirements, that do not increase or create impacts, and that comply with the mitigation measures.

Project Change Level	Description	Example
Level 1 (Minor Change)	Temporary actions that will not affect biological or cultural resources or deviate from APMs, MMs, or permit requirements; use of existing private resources (i.e., private road, well) with permission	Temporary use of an existing access road, storage yard, well, hydrant, etc. not associated with current project
Level 2 (Major Change)	Changes to established mitigation protocols or project activities due to new information or improved techniques that result in temporary, insignificant impacts on resources	Installing additional disposal sites; road widening or additional grading; changes to seed mix for restoration if does not significantly alter final targeted vegetation composition
Petition for Modification	Significant, long-term changes to construction plan or mitigation protocol that require additional biological or cultural surveys or verification; discovery of omissions or errors in project documents (permits, MMs, APMs) that jeopardize biological or cultural resources; discovery of new and significant biological or cultural resources that require new avoidance measures	Construction of a new access road or bridge; discovery of new sensitive species or habitat not initially described in project documents; changes to seed mix for restoration that significantly alter final targeted vegetation composition

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Appendix B

NTPR-1 Biological Review, Mesa 500-kV Substation Project

SOUTHERN CALIFORNIA EDISON
MESA 500-KV SUBSTATION PROJECT

NTPR-1 BIOLOGICAL REVIEW

PREPARED FOR:

Southern California Edison
6040 North Irwindale Avenue
Irwindale, CA 91702
Contact: Lori Iles-Rangel

PREPARED BY:

ICF
525 B Street, Suite 1700
San Diego, CA 92101
Contact: Makela Mangrich

September 2017

ICF. 2017. Southern California Edison Mesa 500-kV Substation Project, NTPR-1 Biological Review. September. (ICF 00017.17.) San Diego, CA. Prepared for Southern California Edison, Irwindale, California.

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Executive Summary

A biological review was conducted for the Mesa Substation NTPR-1 Project Component (Project Component) located in the cities of Bell Gardens, Commerce, Montebello, and Monterey Park, California (Figure 1 [all figures are located in Attachment A]). The biological review was conducted to demonstrate that Southern California Edison (SCE) has met the preconstruction mitigation measure (MM) requirements for construction of Mesa 500-kV Substation outlined in the *Mesa Substation Final Environmental Impact Report* (FEIR) (Ecology and Environment 2016).This report summarizes the results of a literature review of prior reports on surveys conducted within the Project Component and the results of those surveys. These include focused surveys conducted in 2015 and 2017 for special-status species potentially occurring within the Project Component.

The Project Component includes the removal, relocation, modification, and/or construction of various transmission, subtransmission, distribution, and telecommunication facilities, including the relocation of an existing 72-inch Metropolitan Water District pipeline that traverses the substation property, within and adjacent to Mesa Substation.

Potential permanent impacts from modifications to the existing Mesa substation, substation support components, transmission line relocations, subtransmission line relocations, telecommunications line relocations, and distribution line relocations will affect a total of 49.0 acres, the majority of which contain disturbed/developed (25.1 acres) areas and ruderal areas (9.6 acres). Of the remaining 14.3 acres, a 3.0-acre permanent impact will occur on sensitive natural communities. Potential temporary impacts from modifications to the existing Mesa substation, substation support components, transmission line relocations, subtransmission line relocations, telecommunications line relocations, and distribution line relocations will affect a total of 89.9 acres, the majority of which are disturbed/developed (69.9 acres) areas and ruderal areas (12.9 acres). Of the remaining 7.4 acres, temporary impacts will occur on 3.0 acres of sensitive natural communities. All work areas adjacent to and within sensitive habitats will be avoided and/or minimized to the greatest extent feasible.

A literature search was conducted for the Project Component to determine the potential for special-status biological resources to occur within the 5-mile vicinity of the Project Component. Focused surveys were conducted within the Project Component in 2015 and 2017 for coastal California gnatcatcher (*Polioptila californica californica*) and special-status plants. Additional habitat assessments and focused surveys conducted for Tehachapi Renewable Transmission Project (TRTP) are relevant to the Project because portions of the TRTP area overlap with the Project Component area. These include coastal California gnatcatcher, burrowing owl, and special status bats conducted in 2007, 2008, 2009, 2010, and 2011.

The general biological conditions, including major vegetation communities, plant and wildlife inventories, and hydrologic features, were documented for the Project Component. Applicant Proposed Measures (APM) and FEIR MMs, as well as those measures specified by the Biological Opinion and Streambed Alteration Agreement (SAA) that are applicable to the Project Component, are included in Table ES-1.

Special-Status Wildlife

Coastal California gnatcatcher-focused surveys were conducted for TRTP within the Project Component in 2010 and 2011. This species was observed foraging and nesting each year. In 2015, a protocol survey was conducted specifically for the Project Component. Two nesting pairs and their nests were identified within the Project Component. Coastal California gnatcatchers were also incidentally observed foraging and nesting within non-native vegetation at the Mesa Substation during nesting bird surveys for TRTP (Figure 2, Sheets 1 and 2). In 2017, protocol surveys for this species were also conducted within the Project Component. Four coastal California gnatcatcher nests were detected, including two nests within mulefat scrub, and two nests in disturbed coastal sage scrub habitat. Based on observed behavior and timing, it is assumed that there are two breeding pair of coastal California gnatcatcher associated with these nests, and each pair is assumed to have nested twice during the 2017 season.

Construction of the scope of work associated with NTPR-1 would result in permanent impacts on up to two pairs of coastal California gnatcatchers that occupy habitat on the Mesa Substation site within areas mapped as coastal sage scrub, non-native woodlands, ephemeral drainages, mulefat scrub, and ruderal areas. Mitigation for impacts on coastal California gnatcatcher will be provided consistent with APM BIO-4 and the Biological Opinion issued by the U.S. Fish and Wildlife Service.

The Project Component provides potential nesting habitat for bird species that are protected under the Migratory Bird Treaty Act and California Fish and Game Code, including raptors. Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act. Pre-construction surveys will be conducted prior to any project-related activities to ensure the Project does not result in impacts on nesting birds or raptors. When breeding birds with active nests are found, a biological monitor will establish a suitable buffer per APM BIO-6, MM-BR-11, and Project's Nesting Bird Management Plan around the nest for ground- and helicopter-based construction activities.

Special-Status Plants

One special-status plant species, southern California black walnut (*Juglans californica*) was observed within the Project Component. There are no trees regulated by the County of Los Angeles within the Project Component. Pre-construction surveys were conducted in May 2017 and additional southern California black walnut individuals were mapped and these occurrences are included in this report. Additional pre-construction sweeps and biological construction monitoring will help to ensure avoidance of special-status plants including any potentially-occurring species not observed during prior surveys, as well as southern California black walnut as required by APM BIO-01, MM BR-1, MM BR-8, and MM BR-9. Mitigation for impacts on southern California black walnut will be provided consistent with MM BR-7. Potential impacts on any additional special-status plants observed during pre-construction surveys would be addressed through the development of a restoration plan in accordance with MM-BR-8.

Vegetation Communities

Vegetation mapping identified nine vegetation communities within the Project Component: California annual grassland, coastal sage scrub, disturbed/developed, ephemeral drainages, man-

induced wetlands, mulefat scrub, non-native woodland, ruderal and riparian woodland; five of which are sensitive natural communities: coastal sage scrub, ephemeral drainages, man-induced wetlands, mulefat scrub, and riparian woodland (Ecology and Environment 2016). Native vegetation will be avoided to the maximum extent feasible, and will be marked/flagged appropriately to avoid accidental impacts, in accordance with APM BIO-02 and MM BR-3. Biological monitoring will also assist in avoiding and/or minimizing impacts on these sensitive habitats.

Hydrological Features

ICF wetland biologists conducted wetland delineations within the Project Component for the TRTP at various times from 2009 to 2011 (ICF 2010a, 2010b, 2011a). In 2014, Insignia biologists conducted a delineation of wetlands and waters within the Project Component. Surveys were conducted to verify the jurisdictional waters and wetlands identified for the TRTP and to document any additional waters and wetlands. The delineations were conducted in accordance with the U.S. Army Corps of Engineers (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).

A total of five USACE-jurisdictional features were observed, documented, and will be affected by the Project Component. Eight jurisdictional water features under the jurisdiction of the Regional Water Quality Control Board will be affected by the Project Component. These include all five USACE-jurisdictional features, plus three additional ephemeral drainages. In addition, California Department of Fish and Wildlife (CDFW)-jurisdictional areas expected to be affected by the Project Component include a total of eight drainages (of which all are RWQCB-jurisdictional), five ditch features (including one cluster of four connected ditches), and riparian vegetation associated with those features. This riparian vegetation consists of mulefat scrub and riparian woodlands exhibiting a high-degree of invasive species cover.

Impacts on these features will require the issuance of the following regulatory permits: 401 Water Quality Certification (WQC) by the State Water Resources Control Board, 404 Authorization by USACE, and an SAA by CDFW. Permit applications will include avoidance and minimization measures to reduce impacts on jurisdictional waters, water quality, and biological resources. In addition, mitigation requirements will be calculated for proposed impacts and summarized in the Habitat Restoration and Mitigation Plan which has been prepared for the Project. All jurisdictional features will be avoided until the permits are issued.

Table ES-1. Mitigation Monitoring, Compliance, and Reporting Program Implementation Table

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
FEIR Mitigation Measures						
APM BIO-1	**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 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.	Yes	Yes	Yes	AMEC 2009a; ICF 2010c; Noreas 2015	Focused special-status plant surveys were conducted in May 2017 and although some additional southern California black walnuts were observed, no new special-status plant species were observed. Pre-construction clearance sweeps also will be performed immediately prior to construction for special-status plant species, including, Nevin's barberry, and their locations will be marked for avoidance. Marked special-status plant species will be avoided during construction. Mitigation for impacts on southern California black walnut will be provided as outlined in the Habitat Restoration and Mitigation Plan (HRMP) and are required by MM BR-7 and BR-8. Impacts on any special-status plants not previously documented within the Project Component will be addressed through the development and implementation of a Revegetation Plan if observed during pre-construction sweeps or biological monitoring during construction.
APM BIO-2	**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 Stormwater Pollution Prevention Plan) 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.	Yes	Yes	Yes	AMEC 2009a; ICF 2010c; Noreas 2015	The applicable requirements of the Revegetation Plan outlined in this Applicant Proposed Measure (APM) have been incorporated into the HRMP and is required by MM BR-8. Surveys and biological monitoring will be conducted in accordance with this APM and with MM BR-9.
APM BIO-3	**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 such resources are avoided.	Yes	Yes	N/A	AMEC 2009a, 2009b, 2009c; Aspen 2009; ICF 2010a, 2010b, 2010c, 2010d, 2010e, 2011a, 2011b, 2011c, 2011d; Insignia 2015a, 2015b; Noreas 2015; RBC 2015; SCE 2017	Qualified California Public Utilities Commission (CPUC)–approved biological monitors will ensure avoidance of impacts on special-status species during construction in areas with special-status species, native vegetation, wildlife habitat, nesting birds, or other unique resources. If any other special-status species are detected within or near disturbance areas, applicable applicant-proposed measures and mitigation measures from the Mesa Substation Final Environmental Impact Report (FEIR), including measures from any applicable permits and the U.S. Fish and Wildlife Service (USFWS)–issued Biological Opinion (BO), will be implemented.
APM BIO-4	**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	Yes	Yes	Yes	ICF 2010f, 2011b; RBC 2015; SCE 2017	Pre-construction surveys for coastal California gnatcatcher will be conducted during the nesting season in suitable habitat (including not just CSS, but also other occupied habitats) and a

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	would commence between February 1 and August 30. Surveys for coastal California gnatcatcher would be conducted in suitable habitat within 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 exclusionary 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 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 gnatcatcher and their habitat would be mitigated as required by the USFWS.					USFWS-approved biologist will monitor all construction activity in occupied habitat. Buffers will be established around active nests. MM BR-12 supplements this APM. Surveys and biological monitoring will be conducted in accordance with this APM and with MM BR-12.
APM BIO-5	**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 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.	Yes	No	Yes	SCE 2017	In accordance with the BO, no suitable habitat for the least Bell's vireo exists within the Project Component. A least Bell's vireo was identified within the man-induced wetlands located in the northeast portion of the Project Component during construction monitoring for Tehachapi Renewable Transmission Project (TRTP). However, the wetland vegetation at this site is no longer present because the leaking underground irrigation pipe that fed this wetland has been repaired by the adjacent landowner. Therefore, pre-construction surveys for this species are not required. If least Bell's vireo are observed during pre-construction nesting bird surveys, avoidance measures outlined in this APM will be implemented and additional coordination with the USFWS and California Department of Fish and Wildlife (CDFW) will be conducted. MM BR-13 supplements this APM. Surveys and biological monitoring will be conducted in accordance with this APM and with MM BR-13.
APM BIO-6	**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(s). 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 nests would continue until the adjacent construction activities are completed or until the nests are no longer active.	Yes	Yes	Yes	ICF 2010f, 2011b; RBC 2015; SCE 2017	A pre-construction nesting bird survey will be required because the Project Component provides potentially suitable nesting habitat for native birds protected by the Migratory Bird Treaty Act and California Fish and Game Code for areas of construction during the breeding season. If breeding birds with active nests are found, a biological monitor will establish a suitable buffer per MM BR-11 and Project's Nesting Bird Management Plan around the nest for ground and helicopter-based construction activities. Refer to the relevant MMs (MM BR-1, -11, -12, and -13) for further details of bird nest survey requirements.
APM BIO-7	**Avian Protection.** Electrical facilities would be designed in accordance with Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC 2012).	Yes	Yes	N/A	SCE 2017	The transmission and sub-transmission towers and poles included in the Project will be designed with the Suggested Practices for Raptor Protection on Power Lines (APLIC 2012).
APM BIO-8	**Compensation for Permanent Impacts.** Permanent impacts to all jurisdictional water resources would be compensated at a 1-to-1 ratio, or as required by the USACE, CDFW, and RWQCB.	Yes	Yes	N/A	ICF 2010a, 2010b, 2011a; Insignia 2015b	Any unavoidable impacts on jurisdictional water resources will be compensated at ratios specified in the Section 404 Nationwide Permit (NWP), Section 401 Water Quality Certification (WQC) and the CDFW Streambed Alteration Agreement (SAA). All compensatory mitigation for permanent impacts will occur in off-site mitigation banks in accordance with the Compensatory Mitigation Plan, as summarized in the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
MM BR-1	**Pre-construction Surveys.** Prior to construction and activities in a new work area that may include vegetation clearing, staging, and stockpiling, or other activities with the potential to directly or indirectly affect wildlife, the applicant shall retain a qualified biologist approved by the CPUC to conduct pre-construction surveys for sensitive biological resources, including special-status plant species and special-status wildlife, and nesting birds in all areas of temporary and permanent disturbance. Pre-construction surveys shall be species and resource appropriate and typically conducted a maximum of 14 days prior to construction as approved by the CPUC. If there is no work in an area for 14 days or more, the area shall be considered a "new work area" if construction begins again. Nesting bird and burrowing owl pre-construction surveys shall be consistent with the timing specified in the Nesting Bird Management Plan required by MM BR-11. Additional western spadefoot pre-construction surveys shall be conducted at any time of year where project activities cause vibrations and where artificial wetting of ground surface may result in spadefoot emergence. Western pond turtle pre-construction surveys shall include live trapping in areas where visual observation may be compromised due to water depth or dense vegetation growth near water. The information gathered from these surveys shall be used to develop site- and resource- specific actions to minimize impacts on sensitive resources from project-related activities. Additionally, a CPUC-approved qualified biologist shall conduct pre-construction clearance sweeps for special-status species at all access, staging, and laydown/work areas where suitable habitat is present within approximately 24 hours of construction activities each day.	Yes	Yes	N/A	AMEC 2009a, 2009b, 2009c; Aspen 2009; ICF 2010a, 2010b, 2010c, 2010d, 2010e, 2011a, 2011b, 2011c, 2011d; Insignia 2015a, 2015b; Noreas 2015; RBC 2015; SCE 2017	Coastal California gnatcatcher (CAGN) protocol surveys were conducted by CAGN-permitted ICF biologists between March 15 and June 30, 2017 in accordance with the USFWS protocol. Presence and numbers of CAGN were determined as part of this survey effort. Mitigation for CAGN impacted by the Mesa Substation project is specified in the USFWS Biological Opinion (BO) issued for the project. Western Burrowing Owl pre-construction surveys were conducted on September 14 and 15, 2017, in accordance with the Mesa Substation Nesting Bird Management Plan, Mesa Substation Burrowing Owl Management Plan, Mitigation Measure BR-11, and the CDFW 2012 Staff Report on Burrowing Owl Mitigation. In May of 2017, ICF conducted a western spadefoot habitat assessment for the entire Mesa Substation Project site. There is no western spadefoot habitat present within the areas covered by NTP-1. Special-status plant, and southern California black walnut pre-construction surveys were conducted by qualified NOREAS botanists during the third week of May 2017. These surveys were conducted during the blooming period of expected target species, as confirmed by visits to reference populations. Impacts to special-status plant species and southern California black walnut can be quantified and/or confirmed based on the results of this survey. There is no western pond turtle habitat present within the areas covered by NTP-1. There is no least Bell's vireo habitat present within the areas covered by NTP-1. The start of Project construction is not within the raptor nesting season. Raptors will be monitored during normal biological monitoring for courtship and nesting behaviors starting on January 1, 2018. In the event a raptor pair chooses to nest within the Mesa Substation Project site or applicable Project buffer, SCE and its team will implement appropriate avoidance and minimization measures as specified in the Nesting Bird Management Plan. The start of project construction is not within nesting bird season. Nesting birds will be monitored during normal biological monitoring for courtship and nesting behaviors starting on February 1, 2018. In the event a nesting bird pair chooses to nest within the Mesa Substation project site or

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
						applicable project buffer, SCE and its team will implement appropriate avoidance and minimization measures as specified in the Nesting Bird Management Plan. If there is no work in an area for 14 days or more, the area shall be considered a "new work area" if construction begins again and appropriate pre-construction surveys will be conducted in coordination with SCE.
MM BR-2	**Limits of Construction Activities.** Project Boundaries and Sensitive Areas Clearly Marked. In all locations of the project, construction activities, vehicular traffic (including movement of all equipment), and storage of construction materials shall be restricted to approved access roads and established construction areas indicated by flagging, fencing, and/or signage. The applicant shall ensure that exclusionary fencing is installed prior to the start of construction activities around laydown and work and staging areas, where necessary and appropriate, to prevent inadvertent encroachment into the project area by special status species and the inadvertent encroachment by project activities into habitat adjacent to areas of impact. Identified sensitive resources such as aquatic features, special-status plants and natural communities, and known wildlife habitat of special-status species (e.g., nests, burrows, or dens) shall be assigned a buffer as appropriate and clearly marked (e.g., with signs, flagging, ropes, and/or fencing) to ensure they are avoided unless disturbance was previously approved. A CPUC-approved qualified biologist shall determine the appropriate buffer depending on the species and the construction activity. The CPUC-approved qualified biologist shall perform or supervise flagging and fencing to ensure that these activities are conducted without harm to special-status or habitat. If special-status wildlife, or evidence of special-status wildlife or special-status plant species not previously analyzed in this document, is found at any time, the applicant shall immediately halt work and contact the appropriate wildlife agency(ies) and the CPUC. Work will resume once the CPUC provides approval.	Yes	N/A	N/A	N/A	Construction activities, vehicular traffic, and storage of construction materials will be restricted to approved access roads and established construction areas indicated by flagging, fencing, and/or signage. Exclusionary fencing will be installed prior to the start of construction activities around laydown and work and staging areas, where necessary and appropriate, to prevent inadvertent encroachment.

MM BR-3	**Habitat Restoration and Mitigation.** Prior to construction of the proposed project the applicant shall ensure that seasonally-appropriate surveys of vegetation are completed by a qualified botanist familiar with these vegetation associations. SCE shall develop a Habitat Restoration and Mitigation Plan that shall include an estimate of the total area of sensitive natural communities, including all coastal California gnatcatcher habitat and riparian habitat. With the consultation, review, and comment from of the USFWS, CDFW, and CPUC, SCE shall prepare the plan to ensure restoration of all temporary impact areas and to ensure mitigation for permanent impacts on sensitive natural communities and coastal California gnatcatcher habitat. The plan must be submitted 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented. Required plan details include but are not limited to: • All temporarily impacted areas shall be restored. All temporary disturbances to sensitive natural communities shall be restored with the pre-disturbance natural community (except for areas burned in the 2015 "Lincoln" fire, which shall be restored to the pre-fire natural community). All other temporarily impacted areas observed to be utilized by the coastal California gnatcatcher shall be restored with the appropriate coastal sage scrub community if feasible. Temporary impacts on sensitive natural communities and habitat utilized by gnatcatchers shall be mitigated by restoration at a minimum ratio of 1.5:1; if restoration is not feasible within 1 mile of the project area, SCE shall purchase credits and/or mitigation lands at a minimum ratio of 2.5:1 from an entity approved by CDFW and/or USFWS, as appropriate. Areas that do not provide habitat to coastal California gnatcatcher, other special-status species, or sensitive resources may be restored to the conditions agreed upon between the landowner and the applicant. • The restoration plan shall specify how each type of vegetation community, including sensitive natural communities, shall be addressed in terms of the following restoration details: topsoil segregation and conservation; vegetation treatment and removal; revegetation methods, including seed mixes, rates, appropriate habitat structure, and transplants; criteria to monitor and evaluate revegetation success (minimum of four years of monitoring and 80% successful native plant establishment); and compensation and remedial measures to be implemented as needed. • For sensitive natural communities, mitigation of permanent impacts shall occur after construction at a minimum level of 1.5:1. In addition, permanent disturbances to coastal California gnatcatcher habitat that is not coastal sage scrub or another sensitive natural community shall be mitigated at a minimum 1.5:1 ratio with appropriate coastal sage scrub. Mitigation for permanent impacts shall be completed through one of the following methods: 1. Establishing the natural community within the proposed project areas (onsite); 2. Establishing the natural community outside the proposed project areas (within one mile of the project area); or 3. If Options 1 and 2 are not feasible, SCE shall purchase credits and/or mitigation lands at a minimum ratio of 2.5:1 from an entity approved by CDFW and USFWS, as appropriate. For Options 1 and 2 (onsite and offsite), the plan shall specify restoration details, including that post-construction monitoring shall be performed for a minimum of four years, a success criteria of 80% successful native plant	Yes	Yes	N/A	N/A	The HRMP has been prepared and was submitted to the CPUC, CDFW, and USFWS 60 days prior to the planned start of construction for review and comment. SCE will work with the CPUC on plan approval before the plan is implemented to ensure restoration of all temporary impact areas and to ensure mitigation for permanent impacts on sensitive natural communities, jurisdictional resources, and coastal California gnatcatcher habitat.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	establishment shall be met, and remedial measures shall be implemented if success criteria are not met. • Impacts on areas that were previously restored for SCE's TRTP shall be avoided if possible. The plan shall identify any impacts on areas that were previously restored for TRTP and provide detailed restoration plans for these areas. Restoration in these areas shall follow restoration criteria that are consistent with the goals and criteria of TRTP restoration, per TRTP Mitigation Measure B-1a: Provide restoration/compensation for impacts to native vegetation communities. With CPUC approval, requirements described in this mitigation measure and the Habitat Restoration and Mitigation Plan may be satisfied through compliance with permit conditions, if these requirements are equally or more effective. SCE shall also minimize the removal of coastal sage scrub or other suitable coastal California gnatcatcher habitat, particularly within designated critical habitat for the coastal California gnatcatcher. To minimize the removal of vegetation in habitat areas of the coastal California gnatcatcher, SCE shall ensure that trimming of all native vegetation, riparian vegetation, and vegetation that provides potential habitat for coastal California gnatcatcher is monitored by a qualified biologist approved by the CPUC. Trimming of native trees and native arborescent shrubs shall be completed outside of the nesting bird season and shall be monitored by a qualified arborist.					
MM BR-4	**Noxious and Invasive Weed Control Plan.** Prior to construction, the applicant shall submit a Noxious and Invasive Weed Control Plan that shall be implemented before, during, and after construction, including during the project restoration phase. This plan shall include measures designed to avoid the introduction and spread of noxious weeds and invasive plant species designated by the state, the counties, and local weed control boards. This plan shall be developed in consultation the CPUC and must be submitted to the CPUC 60 days prior to the planned start of construction. CPUC approval is required before the plan is implemented. At a minimum, this plan shall include the following measures: • Pre-construction surveys for special-status plant species (APM BIO-01 and MM BR-1) shall include surveys for state-, county-, and locally designated noxious weed species. The applicant shall coordinate with the appropriate agencies, including the CPUC, to determine appropriate species-specific measures to implement, or whether control or treatment of a species is feasible and preferable. • All vehicles and equipment shall be clean and free of dirt, mud, and any debris that may carry invasive plant seeds or parts prior to arrival at the project location, including prior to use of access roads. • Vehicle and equipment wash stations (mobile or built in place) shall be erected at strategic locations on the ROW where designated weed species have been detected, and where doing so would help prevent the spread of these species. • Straw, hay, gravel, soil, or other construction or erosion control materials that could inadvertently contain unwanted plant propagules shall come from state-cleared sources that are free of invasive weeds.	Yes	N/A	N/A	N/A	The Noxious and Invasive Weed Control Plan has been prepared and was submitted to the CPUC 60 days prior to the planned start of construction. SCE will work with the CPUC on plan approval before the plan is implemented.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	• All seeds to be used in revegetation and reclamation activities shall come from weed-free sources. • All temporary disturbance areas that will be restored post-construction shall be monitored for invasive species establishment on a monthly basis during the growing season and on a quarterly basis outside of the growing season for at least one year after project restoration is completed. If evidence of the expansion or increase in abundance of a known invasive species or introduction of a new invasive species is found, the applicant shall initiate appropriate control measures, which may include mowing or trimming of weeds prior to seed set, as outlined in the plan.					
MM BR-5	**Worker Environmental Awareness Program.** The applicant shall develop and implement a WEAP for all project personnel. The program must be submitted to the CPUC at least 30 days prior to the start of construction for review. CPUC approval is required before the program is implemented. All project personnel shall undergo training prior to entering the ROW. The training shall include a description of the species of concern and their habitats, the general provisions of applicable environmental regulations, the need to adhere to the provisions of the regulations, the penalties associated with violating the provisions of the regulations, the general measures that are being implemented to conserve the species of concern as they relate to the project, the access routes to the project, and project boundaries within which the project-related activities must be accomplished. This training shall include a detailed review of how project personnel can identify sensitive biological resources in the project area which need to be avoided or where work activities will be restricted.	Yes	N/A	N/A	N/A	A complete Worker Environmental Awareness Program (WEAP) training has been prepared, including a PowerPoint presentation with audio voice-over, species/resource cards, acknowledgment forms and a hard hat sticker to track who has taken the WEAP training. The WEAP was approved by the CPUC on April 7, 2017. Sign-in sheets for those who attended WEAP training will be submitted monthly.
MM BR-6	**Avoidance of Nevin's barberry.** The project shall be designed to avoid impacts on occurrences of Nevin's barberry during construction and operation and maintenance. Prior to the start of construction, the applicant's CPUC-approved qualified biologist shall complete pre-construction surveys in suitable habitat to identify any occurrences. Where Nevin's barberry occurs, all construction and operation and maintenance activities shall occur outside a restrictive buffer, which shall be established by a CPUC-approved qualified biologist. Vehicles and crew members shall be prohibited from coming within 200 feet of identified Nevin's barberry unless a buffer reduction is approved by the CPUC after coordination with USFWS. A reduced buffer shall be a minimum of approximately 15 feet from a Nevin's barberry plant. A qualified biologist approved by the CPUC shall monitor crew members and the Nevin's barberry to ensure all project activities stay away from Nevin's barberry within the buffer. The biologist shall have the authority to halt work if it is determined that Nevin's barberry could be impacted. In the event that previously unknown occurrences of Nevin's barberry are discovered during pre-construction surveys or during construction or operations, a 200-foot buffer shall be established and the USFWS and CPUC shall be contacted within 24 hours.	Yes	Yes	N/A	Noreas 2015	Based on multiple years of negative surveys for this conspicuous plant, no additional Nevin's barberry individuals are anticipated to be observed prior to construction. Regardless, pre-construction surveys will be conducted within the Project Component in accordance with this MM. For the one Nevin's barberry individual observed within the landscaping area of Whittier Narrows Recreation Area, work will involve construction personnel walking to and from the Telecom pole in its vicinity. No ground disturbing activities will take place. At the start of each day where construction activities will take place near to this individual, workers will receive reminders at the tailboard meetings to avoid this individual. Construction activities will be monitored in accordance with this MM to ensure personnel do not encroach upon this individual at any time during construction.
MM BR-7	**Restoration of Southern California Black Walnut.** SCE shall take measures to avoid and minimize impacts on Southern California black walnut resulting from project construction activities, and shall plant replacement trees for any impacted or removed specimens. Prior to construction (after completion of final engineering design of project features), black walnut tree evaluation surveys shall be completed by a qualified arborist (an arborist with extensive local or	Yes	Yes	Yes	Noreas 2015	As specified in the HRMP, all impacts on southern California black walnut will be mitigated at off-site locations at a ratio of 4:1. Other than those plants that will be intentionally removed during grading of the substation site, no other construction will occur within the dripline of any southern California black

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	regional expertise in the planting, care, and maintenance of black walnut trees). The arborist must be approved by the CPUC. The arborist shall record a brief description (e.g., location, height, diameter at breast height, condition) of each black walnut tree with a dripline within 25 feet of construction activities. All construction activities that take place within the driplines of black walnut trees (i.e., the outermost extent of the canopy) that are not being intentionally removed shall be monitored by a qualified arborist to reduce, to the extent feasible, impacts on the tree, including roots. California black walnut trees that are impacted within the drip line or intentionally removed shall be replaced at a 2:1 ratio. If the diameter at breast height of the tree to be removed is 24 inches or less, it shall be replaced with a 24-inch box tree. If the diameter at breast height of the tree to be removed is greater than 24 inches, it shall be replaced with a 36-inch box tree. Replacement trees shall be planted on site as near to the original location as feasible and biologically appropriate, and shall be monitored by a qualified arborist who will ensure the replacement trees are placed in a suitable area. Replacement trees shall be monitored for seven years after the initial planting or until the arborist determines that 80 percent of trees are successfully established. If onsite replacement is not feasible, SCE shall plant replacement trees offsite as near to the proposed project as is appropriate and feasible. The same monitoring requirements and success criteria would apply as for those trees planted onsite. If neither of the two options above are feasible, SCE shall purchase credits and/or mitigation lands from an entity approved by CDFW such that a restoration ratio of 4:1 is achieved. Tree removal shall not be permitted until a detailed plan for restoration, including identification of planting location, or offsite mitigation lands, is approved by the CPUC, and in consultation with USFWS and CDFW. Replacement trees shall be planted before tree removal, or if not feasible or if potentially harmful to the replacement trees, as soon as possible after removal.					walnut trees. As a result, none of the other conditions in the MM apply.
MM BR-8	**Restoration of Special-status Plants.** The applicant shall complete pre-construction surveys during the appropriate blooming period to identify special-status plants, including Coulter's Matilija poppy, Plummer's mariposa lily, intermediate mariposa lily, and Southern California tarplant populations in the proposed project component areas where suitable habitat is present. Special-status plants shall be identified by a qualified biologist and flagged or surrounded with fencing in such a way that disturbance of the populations or individuals shall be avoided. In the event that populations or individuals of special-status plants (other than Southern California black walnut—see MM BR-7) cannot be avoided, the applicant shall develop and implement a restoration plan for each plant which will be submitted to CPUC and CDFW for review and comment no less than 60 days prior to construction activities within the work area where impacts would occur. The CPUC will coordinate with CDFW, and CPUC approval is required before the plan is implemented. In the case of Southern California black walnut trees, a restoration plan will be completed and approved as described in MM BR-7. For temporary impacts to special-status plants, restoration shall occur after construction at a minimum ratio of 1.5:1 for all special-status plants in the proposed project component areas. The number of plants at seven years will be a minimum of 1.5 times the number destroyed. Mitigation for permanent impacts shall be completed by:	Yes	Yes	Yes	AMEC 2009a; ICF 2010c; Noreas 2015	Pre-construction clearance surveys were performed for special-status plant species, including Coulter's Matilija poppy, Plummer's mariposa lily, intermediate mariposa lily, and Southern California tarplant in May 2017. None of these species were observed within the Project Component. As a result, it not anticipated that the requirements of this mitigation measure would apply. If additional special-status plants are observed during pre-construction sweeps immediately prior to construction (as required by MM BR-1) and these occurrences cannot be avoided, SCE will modify the HRMP to describe mitigation for these impacts, in accordance with this mitigation measure.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	1. Establishing individual plants within the proposed project areas (onsite); 2. Establishing individual plants outside the project areas (offsite); or 3. Purchase of credits and/or mitigation lands at a ratio of 2.5:1 from an entity approved by CDFW. For Options 1 and 2 (establishing plants onsite or offsite), the plan shall include the following elements: planting/seeding palettes; monitoring and contingency program; monitoring schedule, including duration (seven years) and performance criteria (minimum of 1.5 times the number destroyed); and any specific measures that will be required to ensure success of the restoration effort. This mitigation measure may be coordinated with areas restored for MM BR-3 if appropriate.					
MM BR-9	**Construction Monitoring.** The applicant shall ensure that a qualified biologist approved by the CPUC serves as a construction monitor during periods when construction activities occur near active nest areas, or within 100 feet of native vegetation or vegetation that has the potential, or is known, to provide habitat for special-status species. The monitor shall have the authority to temporarily stop work that they determine threatens a special-status species or sensitive resource. The monitor shall determine what appropriate action to take, and work will resume once the monitor determines there is no longer a threat to the special-status species or sensitive resource, or consultation has occurred with the appropriate wildlife agencies which determines appropriate steps have been taken and a threat is no longer present.	Yes	Yes	Yes	AMEC 2009a, 2009b, 2009c; Aspen 2009; ICF 2010a, 2010b, 2010c, 2010d, 2010e, 2011a, 2011b, 2011c, 2011d; Insignia 2015a, 2015b; Noreas 2015; RBC 2015; SCE 2017	A qualified CPUC–approved biological monitor will ensure avoidance of impacts on special-status species during construction in areas with special-status species or their habitats, native vegetation, sensitive vegetation communities, nesting birds, or other unique resources. If any other special-status species are detected within or near disturbance areas, applicable APMs and MMs from the Mesa Substation FEIR, applicable permits, and the USFWS–issued BO, will be implemented.
MM BR-10	**Open Trenches and Pipes.** To prevent entrapment of wildlife, SCE shall ensure that all steep-walled trenches, auger holes, open-ended piping, or other excavations are covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. For open trenches only, these may instead have wildlife escape ramps within the trench maintained at intervals of no greater than 100 feet. These ramps shall have a maximum slope not to exceed 2:1. SCE's biological monitor, approved by the CPUC, shall inspect all trenches, auger holes, or other excavations a minimum of three times per day and immediately prior to backfilling. During working hours, all construction materials with open-ended piping, including but not limited to pipe sections and fencing supports, shall be left capped when not planned for use the same day. During active construction, open piping shall be inspected for wildlife by SCE's biological monitor before the material is moved, buried, or capped. All non-special-status wildlife species found will be safely removed and relocated out of harm's way, through the use of suitable tools such as a pool net when applicable. For safety reasons, under no circumstance will biological monitors enter open excavations.	Yes	N/A	N/A	N/A	All steep-walled trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. Escape ramps will be used in open trenches only.
MM BR-11	**Nesting Bird Management Plan.** To address potential conflicts between construction activities and the activities of nesting birds in the project component areas, SCE shall develop a nesting bird management plan in consultation with USFWS, CDFW, and CPUC, and shall submit the final plan to the CPUC no less than 60 days prior to construction. CPUC approval is required before the plan is implemented. The nesting bird management plan shall include measures and an adaptive management program to avoid and minimize impacts to special-status and MBTA- or California Fish and Game Code-protected bird species during nesting periods during project construction. Specifically, the nesting bird management plans shall contain:	Yes	Yes	Yes	AMEC 2009b, 2009c; ICF 2010f, 2011b; RBC 2015; SCE 2017	SCE has prepared a Nesting Bird Management Plan per MM BR-11 and the CPUC approved the Plan on August 16, 2017.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	• Appropriate survey timing, extents, methods, and surveyor qualifications; approved nest deterrent methods, including areas where vegetation will be cleared for the purpose of deterring nesting; monitoring and reporting protocols during construction; protocol for determining whether a nest is active; protocol for documenting, reporting, and protecting active nests within construction areas. If pre-construction survey protocols exist for a certain species, the plan shall identify the species-specific protocol that will be followed and outline how SCE will comply with the protocol. • Guidelines for determining appropriate and effective buffer distances that will account for specific project settings, bird species, stage of nesting cycle, and construction work type. Language for buffer reduction process will be included in the plan, which shall include coordination with the appropriate wildlife agencies and the CPUC if reducing the buffer of a special-status species. • Language specifying that the determination of appropriate and effective buffers between construction activities and identified nests shall be site- and species/guild-specific and data-driven, and will not be based on generalized assumptions regarding all nesting birds. • Language specifying that determinations of appropriate and effective buffers between construction activities and identified nests can be made in the project construction area by the CPUC-approved biological monitor (qualified in accordance with nesting bird plan standards, which will include specific requirements for education and experience in conducting biological surveys and with specific birds in the project area). • Vertical buffers shall be put in place in those areas where helicopters will be used, and they will be based on anticipated effects of rotor wash and noise for the class of helicopter being used by SCE. Surveys and monitoring of the active buffer areas will be performed by a CPUC-approved biologist before, during, and after helicopter use in the vicinity of active buffers. • Burrowing owl pre-construction surveys shall adhere to the current burrowing owl survey protocol identified by CDFW (i.e., CDFW's Staff Report on Burrowing Owl Mitigation [CDFG 2012]). If pre-construction burrowing owl surveys confirm the presence of burrowing owl, SCE shall submit a Burrowing Owl Compensation Plan, in consultation with CDFW and the CPUC, which is consistent with mitigation guidelines in the Staff Report, prior to construction. The final Burrowing Owl Compensation Plan shall be implemented, as specified, throughout construction and restoration. The plan shall describe the compensatory measures that will be undertaken to address the loss of burrowing owl burrows within the project area. This will include mitigation for permanent impacts on nesting, occupied, and satellite burrows and occupied burrowing owl habitat with (a) permanent conservation of similar vegetation communities comparable to or better than that of the impact area, and (b) sufficiently large acreage, and presence of fossorial mammals. SCE shall notify CDFW, USFWS, and the CPUC of all project-related bird injuries or mortalities within 12 hours of discovery and will follow the agencies' recommended actions, if any. Reporting of nesting bird activities, buffer reductions, and monitoring results shall be provided to the USFWS, CDFW, and the CPUC on a regular basis.					

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
MM BR-12	**Gnatcatcher Surveys.** Prior to the start of construction, SCE shall ensure that protocol-level pre-construction surveys are conducted by a qualified biologist approved by the CPUC for the coastal California gnatcatcher in project component areas where suitable habitat exists in accordance with the Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines (USFWS 1997). In the event that coastal California gnatcatchers are observed during pre-construction surveys, a qualified biologist must identify the boundaries of the pair's territory and SCE must not conduct construction activities within 500 feet of the territory, or as otherwise approved by the CPUC, in consultation with USFWS. SCE shall notify USFWS the CPUC in the event gnatcatcher territory or nest sites are confirmed by surveys, immediately upon return from the field. If infeasible to maintain a buffer of 500 feet (or a distance otherwise approved by USFWS), by installing temporary flagging or fencing, from an active gnatcatcher territory, construction activities within or near these areas will be performed outside the breeding and nesting season (coastal California gnatcatcher breeding/nesting season is approximately February 1 through August 30). SCE may conduct construction activities in gnatcatcher habitat during the breeding and nesting season if protocol-level surveys (conducted within one year prior to construction activities per protocol) confirm the absence of breeding gnatcatchers, or if the 500-foot protective buffer from all active gnatcatcher territories can be maintained.	Yes	Yes	Yes	ICF 2010f, 2011b; RBC 2015	Protocol surveys for coastal California gnatcatcher were conducted in 2017 in accordance with USFWS protocol survey requirements within 500 feet of the Project Component. Biological monitoring and nest buffers will conform to the requirements in the BO, SCE's Avian Protection Plan, Nesting Bird Management Plan, and APM BIO-3
MM BR-13	**Pre-Construction Surveys for Least Bell's Vireo.** Prior to construction and within their breeding season (generally April 10-August 31), SCE shall complete protocol-level surveys for least Bell's vireo in areas of suitable or potentially suitable riparian and other habitat within the proposed component areas. Surveys will be conducted by a qualified biologist approved by the CPUC according to the survey protocol for least Bell's vireo (USFWS 2001). In the event that least Bell's vireo territory or nest sites are confirmed, SCE shall notify the USFWS and CDFW within 24 hours of returning from the field. If individuals or their nests are observed, biologists will establish and maintain a minimum 500-foot (or a distance otherwise approved buffer from USFWS and CDFW) exclusionary buffer by installing temporary flagging or fencing between the nest territory and construction activities. If infeasible to maintain a buffer of 500 feet (or a distance otherwise approved by USFWS and CDFW), from an active vireo territory, construction activities within or near these areas will be performed outside the breeding and nesting season.	Yes	No	Yes	SCE 2017	In accordance with the BO, no suitable habitat for the least Bell's vireo exists within the Project Component. A least Bell's vireo was identified within the man-induced wetlands located in the northeast portion of the Project Component during construction monitoring for TRTP. However, the wetland vegetation at this site is no longer present because the leaking underground irrigation pipe that fed this wetland has been repaired by the adjacent landowner. Therefore, USFWS has determined protocol level surveys are not necessary for this species. However, pre-construction surveys as part of the 14-day advance pre-construction nesting bird surveys are still required. If least Bell's vireo are observed during pre-construction nesting bird surveys, avoidance measures outlined in this MM will be implemented and additional coordination with the USFWS and CDFW will be conducted.
MM BR-14	**Minimize Impact on Riparian Habitat and Aquatic Features.** SCE shall complete the following: 1. In those areas where riparian vegetation is required to be removed, SCE shall work with a qualified botanist to determine the minimum amount of vegetation required to be removed in order to accommodate project construction, and the correct trimming procedures to employ. 2. Temporary impacts to riparian habitat or aquatic features shall be fully restored according to the Habitat Restoration and Mitigation Plan described in MM BR-3. All permanently impacted areas shall be mitigated using methods described in MM BR-3. 3. Where riparian vegetation or aquatic features would be impacted by project construction activities, SCE shall also consult with USACE, RWQCB, and CDFW to determine if a CWA Section 404 permit, CWA Section 401	Yes	Yes	N/A	Aspen 2009; ICF 2010a, 2010b, 2011c; Insignia 2015a, 2015b	The Project Component crosses 5 USACE-jurisdictional features, 8 Regional Water Quality Control Board-jurisdictional features, 8 CDFW streambeds, a cluster of five isolated man-induced wetlands, and 2 different types of CDFW riparian vegetation areas. As a result, SCE has applied for a CWA Section 404 NWP, CWA Section 401 permit, and SAA pursuant to California Fish and Game Code Section 1600 and will adhere to applicable permit-specific mitigation measures. All features will be avoided until the permits have been issued.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	permit, and LSAA pursuant to California Fish and Game Code Section 1600 would be necessary, respectively. If USACE, RWQCB, or CDFW determines a permit is required, the permit will be obtained prior to impacts and SCE will comply with all terms and conditions of the agreement. In addition, the USACE, RWQCB, and CDFW shall be provided the opportunity to review and comment on the Habitat Restoration and Mitigation Plan if impacts will occur in an area that may be under their jurisdiction. 4. Mitigation requirements described under number 2 above for impacts to riparian habitat or aquatic features may be satisfied by demonstrating compliance with equal or more effective permit conditions, with approval by the CPUC.					
MM BR-15	**Avian Protection Plan.** SCE shall adhere to recommendations published by APLIC (Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012). In addition, SCE shall develop and implement an Avian Protection Plan according to Avian Protection Plan Guidelines (APLIC and USFWS 2005). The plan shall include provisions to reduce impacts on avian species during operation of the proposed project, and shall provide for the adaptive management of project-related issues. The plan shall be submitted for review to CDFW, USFWS, and the CPUC at least 60 days prior to construction. CPUC approval is required before the plan is implemented.	Yes	Yes	N/A	N/A	SCE will utilize their corporate Avian Protection Plan, which is consistent with the requirements of this mitigation measure, as documented in a project-specific memorandum. The Project-specific memorandum that documents compliance with the APP was approved by the CPUC in May 2017.
Clean Water Act Section 401 Water Quality Certification and Order						
G. Best Management Practices	The construction work area will be mass graded. However, the Permittee shall protect and preserve any existing vegetation that may be established within the construction work areas as the three phases of construction are implemented. The protection and preservation of such vegetation will serve to control erosion and filter out sediment.	Yes	N/A	N/A	N/A	SCE and/or its contracted biological monitors will fence and flag vegetated areas that are intended to be preserved, to avoid vegetation clearing outside of the proposed Project limits. This includes the area identified as "Restricted Use Area", which is an area of native coastal sage scrub at the southern edge of the Mesa Substation site.
G. Best Management Practices	Impacts will be minimized at construction sites by flagging native vegetation to be avoided. If unable to avoid impacts to protected vegetation, a Habitat Compensation and Revegetation Plan (HCRP) will be prepared in coordination with the appropriate agencies for areas of native habitat temporarily and/or permanently impacted during construction. The HCRP will describe, at a minimum, which vegetation restoration method (e.g. natural revegetation, planting, or reseeding with native seed stock in compliance with the Project's SWPPP) will be implemented in the Project area. The HCRP will also include the species or habitats that could be implemented, the replacement or restoration ration (as appropriate), the restoration methods and techniques, and the monitoring periods and success criteria, as identified in each measure.	Yes	N/A	N/A	N/A	SCE and/or its contracted biological monitors will fence and flag vegetated areas that are intended to be preserved, to avoid vegetation clearing outside of the proposed Project limits. This includes the area identified as "Restricted Use Area", which is an area of native coastal sage scrub at the southern edge of the Mesa Substation site. SCE has prepared a HRMP that fulfils the requirements of the HCRP stipulated in this measure.
H. Mitigation for Temporary Impacts	1. The Permittee shall restore all areas of temporary impacts to waters of the state and all Project site upland areas of temporary disturbance which could result in a discharge of waters of the state in accordance with the Habitat Restoration and Monitoring Plan (HRMP) dated March 31, 2017 and incorporated herein by reference. 2. Total required Project compensatory mitigation information for temporary impacts is summarized in Table 3.	Yes	N/A	N/A	N/A	SCE will fulfil this requirement as further specified in the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Table 3: Required Project Mitigation Quantity for Temporary Impacts[7] Aquatic Resource Type | Mit. Type[8] | Units | Method[9]: Est. | Re-est. | Reh. | Enh. | Pres. | Unknown Stream Channel | PR | Acres | | 0.08 | | | | |					
I. Compensatory Mitigation for Permanent Impacts	1. Compensatory Mitigation Plan a. Permittees fulfilling their compensatory mitigation obligations by securing credits from an approved mitigation bank or in-lieu fee program, need only include the items described in 40 CFR § 230.94(c)(6), and the name of the specific mitigation bank or in-lieu fee program to be used. 2. Purchase of Mitigation Credits by Permittee for Compensatory Mitigation a. The compensatory mitigation required for impacts to the combined temporary and permanent impacts to Waters of the State is 3.55 acres (5:1 ratio) b. To satisfy the above requirement and additional requirements of the CDFG, the Permittee will purchase a total of 8.01 acres of restoration credits from two certified mitigation banks. i. 2.82 acres of Ephemeral Riparian Restoration Credit-Sequel Canyon Mitigation Bank ii. 0.04 acres of Ephemeral Waters Restoration Credits-Sequel Canyon Mitigation Bank iii. 0.07 acres of Intermittent Riparian Restoration Credits-Sequel Canyon Mitigation Bank iv. 0. 72 acres of Alluvial Floodplain Re-Establishment Credit-Petersen Ranch Mitigation Bank v. 0.03 acres of Alluvial Floodplain Rehabilitated Credits-Petersen Mitigation Bank vi. 4.33 acres of Seasonal Wetland Rehabilitated-Petersen Mitigation Bank This will leave a surplus of mitigation available to be utilized for additional impacts under any subsequent amendment(s) to this Order. c. A copy of Bill of Sale for the purchase of mitigation credit from an approved mitigation bank shall be will be provided to the Los Angeles Water Board within 60 days after project initiation. d The Permittee shall retain responsibility for providing the compensatory mitigation and long-term management until Los Angeles Water Board staff has received documentation of the credit purchase.	Yes	N/A	N/A	N/A	SCE will fulfil this requirement as further specified in the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Table 4: Project Compensatory Mitigation Quantity for Permanent Physical Loss of Area Aquatic Resource Type | Comp Mit. Type[12] | Units | Method[13]: Est. | Re-est. | Reh. | Enh. | Pres. | Unknown Stream Channel | MB | Acres | | | 0.04 | | | Riparian Zone | MB | Acres | | | 2.89 | | | Wetland | MB | Acres | | | 4.33 | | |					
Streambed Alteration Agreement Mitigation Measures						
Administrative Measure 1.1	**Documentation at Project Site.** Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to CDFW personnel, or personnel from another state, federal, or local agency upon request.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction. SCE will compile a hard copy binder with the approved mitigation plans, NTPRs, and approved permits. This binder will be provided at the Project site for personnel to use as needed.
Administrative Measure 1.2	**Providing Agreement to Persons at Project Site.** Permittee shall maintain copies of the Agreement and any extensions and amendments to the Agreement on the project site.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction. SCE will compile a hard copy binder with the approved mitigation plans, NTPRs, and approved permits. This binder will be provided at the Project site for personnel to use as needed.
Administrative Measure 1.3	**Notification of Conflicting Provisions.** Permittee shall notify CDFW if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency, or local codes and regulations. In that event, CDFW shall contact Permittee to resolve any conflict.	Yes	N/A	N/A	N/A	SCE will comply with this measure if any of these conflicts are identified.
Administrative Measure 1.4	**Project Site Entry.** Permittee agrees that CDFW personnel may enter the project site at any time to verify compliance with the Agreement.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction.
Administrative Measure 1.5	**Personnel Compliance On Site.** If the Permittee or any employees, agents, contractors and/or subcontractors violate any of the terms or conditions of this agreement, all work shall terminate immediately and shall not proceed until CDFW has taken all of its legal actions.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction.
Administrative Measure 1.6	**Pre-project Briefing.** A pre-construction meeting/briefing shall be held, involving all the contractors and subcontractors, concerning the conditions in this Agreement.	Yes	N/A	N/A	N/A	SCE will conduct a pre-construction meeting/briefing that involves all contractors and subcontractors prior to initiation of construction activities.
Administrative Measure 1.7	**Notification Requirements.** CDFW requires that the Permittee: 1.7.1 Immediately notify CDFW in writing if monitoring reveals that any of the protective measures were not implemented during the period indicated in this program, or if it anticipates that measures will not be implemented within the time period specified. 1.7.2 Immediately notify CDFW if any of the protective measures are not providing the level of protection that is appropriate for the impact that is occurring, and recommendations, if any, for alternative protective measures. CDFW shall verify compliance with protective measures to ensure the accuracy of the Permittee's mitigation, monitoring, and reporting efforts.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	1.7.3 CDFW may, at its sole discretion, review relevant documents maintained by the Permittee, interview the Permittee's employees and agents, inspect the work site, and take other actions to assess compliance with or effectiveness of protective measures in this Agreement					
Administrative Measure 1.8	**Implementation Requirements.** The agreed work includes activities associated with the Project Location and Project Description that is provided above. Specific work areas and mitigation measures are described on/in the plans and documents submitted by the Permittee with the Notification Package, and shall be implemented as proposed unless directed differently by this Agreement.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction.
Administrative Measure 1.9	**Designated Biologist(s).** At least thirty (30) days before initiating ground- or vegetation-disturbing activities, Permittee shall submit to CDFW in writing the name, qualifications, business address, and contact information for Designated Biologist(s). The Designated Biologist is an individual who is experienced with construction-level biological monitoring, who is able to recognize species in the project area, and who is familiar with the habits and behavior of those species. The Designated Biologist shall have academic and professional experience in biological sciences and related resource management activities as it pertains to this project. The Designated Biologist shall be knowledgeable and experienced in the biology and natural history of local fish and wildlife resources present at the project site. The Designated Biologist shall be responsible for monitoring all project activities, including construction and any ground- or vegetation-disturbing activities in areas subject to this Agreement.	Yes	N/A	N/A	N/A	SCE will submit the names of the Designated Biologists for the Project Component for approval.
Administrative Measure 1.10	**Designated Biologist Authority.** The Designated Biologist shall have authority to immediately stop any activity that is not in compliance with this Agreement, and/or to order any reasonable measure to avoid or minimize impacts to fish and wildlife resources. Neither the Designated Biologist nor CDFW shall be liable for any costs incurred as a result of compliance with this measure. This includes cease-work orders issued by CDFW.	Yes	N/A	N/A	N/A	Administrative Measure is noted.
Administrative Measure 1.11	**On-site Education.** Permittee shall conduct an education program for all persons employed or otherwise working on the project site prior to performing any work on-site during the pre-construction meeting. Permittee shall provide the same education program for any new workers prior to their performing work on-site. The program shall consist of a presentation from the Designated Biologist that includes a discussion of the biology of the habitats and species identified in this Agreement and present at this site. The Designated Biologist shall also include as part of the education program information about the distribution and habitat needs of any special status species that may be present, legal protections for those species, penalties for violations and project-specific protective measures included in this Agreement. Copies of the education program materials shall be maintained at the Project site for workers to reference as needed. Upon completion of the education program, employees shall sign a form stating they attended the program and understand all protection measures. These forms shall be filed at the worksite offices and be available to CDFW upon request.	Yes	N/A	N/A	N/A	A complete WEAP training has been prepared, including a PowerPoint presentation with audio voice-over, species/resource cards, acknowledgment forms and a hard hat sticker to track who has taken the WEAP training. The WEAP will be submitted to the CPUC for review and comment. Sign-in sheets for those who attended WEAP training will be submitted monthly.
Administrative Measure 1.12	**Post Storm Event Inspection.** After any storm event, Permittee shall inspect all sites scheduled to begin or continue construction within the next 72 hours. Corrective action for erosion and sedimentation shall be taken as needed. National Weather Service 72-hour weather forecasts shall be reviewed prior to the start of any phase of the project that may result in sediment runoff to the	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	stream, and construction plans adjusted to meet this requirement. The National Weather Service forecast can be found at: http://www.nws.noaa.gov.					
Avoidance and Minimization Measure 2.1	**Protected Species.** This Agreement does not authorize take, incidental or otherwise, of any protected species. For the purpose of this Agreement, "protected species" means the following: a species fully protected under state law; a candidate species or species listed as threatened or endangered under the California Endangered Species Act (CESA; Fish & G. Code § 2050 *et seq.*) and/or the Endangered Species Act (ESA; 16 U.S.C. § 1531 *et seq.*); a state-listed rare plant species; a species identified by CDFW as a species of special concern; or any other species for which take is prohibited under state or federal law. No direct or indirect impacts shall occur to any protected species, except as may be authorized by a Natural Community Conservation Plan or one or more individual permits that authorize such impacts. If protected species are observed in the area, no work shall occur. Permittee shall immediately notify and consult with CDFW for further actions. Please note that additional state permits may be required prior to commencing project activities.	Yes	N/A	N/A	N/A	SCE anticipates receiving take coverage for two coastal California gnatcatchers breeding pairs through the Section 7 consultation process. No impacts are anticipated to any other federal Endangered Species Act (ESA)- or California Endangered Species Act (CESA)- listed species.
Avoidance and Minimization Measure 2.2	**Incidental Take Permit.** An Incidental Take Permit (ITP) from CDFW may be required if the project, project construction, or any project-related activity during the life of the project will result in "take," as defined by the Fish and Game Code, of any species protected by CESA [Fish & G. Code, §§86, 2080, 2081, subd. (b) (c)]. This Agreement does not authorize take of any rare, threatened or endangered species that may occur within or adjacent to the proposed work area, including western yellow-billed cuckoo, southwestern willow flycatcher, least Bell's vireo, Nevin's barberry, thread-leaved brodiaea, and slender-horned spineflower. If there is a potential for take, the Permittee shall immediately consult CDFW and obtain the necessary state permits and/or submit plans to avoid any impacts to the species. Consultation with U.S. Fish and Wildlife Service or National Ocean and Atmospheric Administration would be required to receive take authority for federal threatened and endangered species.	N/A	N/A	N/A	N/A	An ITP is not anticipated for the Project Component due to the lack of impacts on CESA-covered species.
Avoidance and Minimization Measure 2.3	**Take of Fully Protected Species.** This Agreement does not authorize the take of any fully protected species as defined by state law (Fish & G. Code, §§ 3511, 4700, 5050, 5515). Take of any species designated as fully protected under the Fish and Game Code, including American peregrine falcon, is prohibited.	Yes	N/A	N/A	N/A	No take of fully protected species is anticipated as a result of the Project Component.
Avoidance and Minimization Measure 2.4	**Notification to the California Natural Diversity Database.** If any special status species are observed in project surveys, Permittee or designated representative shall submit California Natural Diversity Data Base (CNDDB) forms to the CNDDB for all pre-construction survey data within thirty (30) working days of the sightings, and provide to CDFW's Regional office three (3) copies of the CNDDB forms and survey maps.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.5	**Check for Wildlife in Pipes/Construction Materials.** For construction activities within CDFW jurisdiction, the Permittee shall have the Designated Biologist visually check sections of pipe/construction materials for the presence of wildlife sheltering within them prior to the sections being placed in the trench and attached together, or shall have the ends capped while stored on site so as to prevent wildlife from entering. After attachment of the pipe sections to one another, whether in the trench or not, the exposed end(s) of the pipeline shall be capped at the end of each day during construction to prevent wildlife from entering and being trapped within the pipeline. Exclusionary devices shall be erected to prevent the migration into or the return of species into the work areas if determined appropriate and feasible by the Designated	Yes	N/A	N/A	N/A	The Designated Biologist will inspect pipes and other construction materials for the presence of wildlife. All steep-walled trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. Escape ramps will be used in open trenches only.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Biologist. Such exclusionary devices shall be checked by Designated Biologist on a daily basis to check/ensure continued exclusionary device effectiveness. Should CDFW personnel visit the site during grading and initial impact activities and no Designated Biologist is available, construction activities shall be halted.					
Avoidance and Minimization Measure 2.6	**Escape Ramp in Trench.** To prevent entrapment of wildlife, Permittee shall ensure that all steep-walled trenches, auger holes, or other excavations are covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. For open trenches only, these may instead have wildlife escape ramps within the trench maintained at intervals of no greater than 100 feet. These ramps shall have a maximum slope not to exceed 2:1. The Designated Biologist shall inspect all trenches, auger holes, or other excavations a minimum of three times per day and immediately prior to backfilling.	Yes	N/A	N/A	N/A	All steep-walled trenches, auger holes, or other excavations will be covered at the end of each day or completely fenced off at night in such a way that wildlife cannot become entrapped. Escape ramps will be used in open trenches only.
Avoidance and Minimization Measure 2.7	**Southwestern Pond Turtle.** The Designated Biologist shall conduct a pre-project survey for southwestern pond turtle on the project site. Survey results shall be provided to CDFW prior to initiation of project activities. Should any southwestern pond turtle be found within the project site, the Designated Biologist shall develop a Southwestern Pond Turtle Plan and submit to CDFW for review and approval prior to initiation of project activities. The Southwestern Pond Turtle Plan shall include avoidance and minimization measures and relocation methods for the protection of these species.	N/A	N/A	N/A	N/A	SCE is not proposing any impacts on permanent or semi-permanent waters, which are required by the species. Several ephemeral drainages present in the Project Component will be affected but they do not support habitat. As no impacts are expected, and no surveys will be conducted. Southwestern pond turtle will be included in the WEAP training.
Avoidance and Minimization Measure 2.8	**Non-listed Special Status Species and other vertebrates.** The Designated Biologist shall be present during work in all CDFW jurisdictional areas during all vegetation-removal and rough grading activities to monitor for non-listed special-status and/or common ground-dwelling vertebrates encountered in the path of project-related activities. The Designated Biologist shall make every effort to relocate the species out of harm's way to the extent feasible by doing one of the following: (1) Utilize shovel, rake, or similar hand tool to gently re-direct the animal out of work area; (2) Install silt fence or other exclusionary fencing to prevent species from re-entering disturbance area; and (3) If the Designated Biologist has the appropriate handling permits, capture/relocate species to appropriate habitat outside the disturbance area. The Designated Biologist shall have the authority to temporarily stop construction activities until the species is determined to be out of harm's way.	Yes	Yes	N/A	N/A	The Designated Biologists will be present during work in all CDFW jurisdictional areas during vegetation removal and grading. The Designated Biologist shall make every effort to relocate any non-listed special-status or common species out of harm's way to the extent feasible.
Avoidance and Minimization Measure 2.9	**Pre-Construction Surveys.** The Permittee shall have a Designated Biologist conduct a pre-construction survey no more than 2 weeks prior to start of work to confirm the presence/absence of species of concern, including western spadefoot toad, likely to be found in the area or using the area to forage during the proposed construction activities. Survey results shall be summarized and provided to CDFW prior to the start of work. Survey limits shall be determined by the Designated Biologist and shall include all areas within the project footprint. If surveys yield information pertaining to any new resource impacts, CDFW shall be consulted immediately. Survey results including negative findings, analysis, and recommendations, along with the field notes shall be provided to CDFW prior to commencing construction. These surveys are intended to record any general wildlife and botanical observations, determine the presence and activity of any species of special concern or any threatened or endangered species, document area of surface water, check bridges and/or culverts to determine if bats or birds are nesting/roosting, visually check pipes	Yes	Yes	N/A	N/A	Pre-construction surveys have been or will be performed for special-status species, including, but not limited to, burrowing owl, coastal California gnatcatcher, nesting birds (including raptors), and special-status plants. Protocol-level coastal California gnatcatcher surveys were conducted during the breeding season in 2017. Consistent with previous surveys, coastal California gnatcatchers were noted nesting within the Mesa Substation site. In May 2017, a habitat assessment was conducted to determine if habitat for western spadefoot toad is present in the Project Component. No habitat was observed for this species. As a result, no further surveys for western spadefoot will be conducted within the Project Component.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	and construction materials for the presence of wildlife sheltering within them, and identify suitable relocation areas for any host of species that need to be moved out of harm's way during construction. Should any special-status be found during pre-project surveys and work must be done in identified areas during sensitive periods, the Permittee shall develop and implement a plan for the protection of these species, which may include plans for relocation of these species. This plan shall be approved by CDFW prior to commencing work. The results of any surveys and any protective measures instituted, as a part of a protection and monitoring plan shall be provided to CDFW within one week from implementation.					In May 2017, Noreas conducted pre-construction special-status plant surveys and no new species of special-status plants were observed. Additional occurrences of Southern California black walnuts were noted, and those results were incorporated into the HRMP. Additional pre-construction survey sweeps will be conducted within two weeks of the start of construction to determine presence/absence per MM BR-1. Biological monitoring conducted in accordance with MM-BR 9 and requirements in MM BR-10 will ensure compliance with this AMM.
Avoidance and Minimization Measure 2.10	**Migratory Birds.** Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). This Agreement does not allow Permittee, any employees, or agents to destroy or disturb any active bird or raptor nest at any time of the year.	Yes	Yes	N/A	N/A	A pre-construction nesting bird survey will be required because the Project Component provides potentially suitable nesting habitat for native birds protected by the Migratory Bird Treaty Act and California Fish and Game Code for areas of construction during the breeding season. If breeding birds with active nests are found, a biological monitor will establish a suitable buffer per MM BR-11 and the Project's Nesting Bird Management Plan around the nest for ground and helicopter-based construction activities.
Avoidance and Minimization Measure 2.11	**Nesting Birds.** Permittee should, if feasible, not remove or otherwise disturb vegetation or conduct any other Project activities on the Project site from February 1 to September 15 to avoid impacts to breeding/nesting birds. If least Bell's vireo utilizes the habitat on the project site during the breeding season, then no construction or vegetation removal shall occur during the breeding season. If no least Bell's vireo occur on the project site and if the nesting season cannot be avoided and construction or vegetation removal occurs between February 1 to September 15 (January 1 to July 31 for raptors), then Permittee shall make every effort to clear vegetation before February 1 (January 1 for raptors) and shall do one of the following to avoid and minimize impacts to nesting birds: 1 The Designated Biologist shall survey for breeding/nesting habitat within the project site for breeding/nesting birds. Surveys shall be conducted once a day for five days at the appropriate time of day during the breeding season. Project activities must be initiated within 72 hours of the conclusion of surveys. The Designated Biologist shall provide CDFW field notes or other documentation within 24 hours of completing the surveys. An email report with a letter report to follow may be used. The email/letter report should state how impacts of any nesting birds will be avoided by citing the appropriate information from these conditions. The Designated Biologist shall implement a default 300 foot minimum avoidance buffers for all passerine birds and 500 foot minimum avoidance buffer for all raptors species. The breeding habitat/nest site shall be fenced and/or flagged in all directions, and this area shall not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, and the young will no longer be impacted by the project.	Yes	Yes	N/A	N/A	A pre-construction nesting bird survey will be required because the Project Component provides potentially suitable nesting habitat for native birds protected by the Migratory Bird Treaty Act and California Fish and Game Code for areas of construction during the breeding season. If breeding birds with active nests are found, a biological monitor will establish a suitable buffer per MM BR-11 and the Project's Nesting Bird Management Plan around the nest for ground and helicopter-based construction activities. The Nesting Bird Management Plan was approved on August 16, 2017.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	2 Permittee, in consultation with the Designated Biologist, shall develop a project-specific Nesting Bird Management Plan (Plan). The site-specific Plan shall be submitted to CDFW for review and comment no less than thirty (30) days prior to initiation of project activities. Permittee shall resolve all CDFW comments prior to initiation of project activities. The Plan shall include appropriate survey methods and establish the necessary buffers to avoid take or nest as defined in the Fish and Game Code section 3503 and 3503.5. Detailed survey results, including field data sheets, shall be submitted to CDFW for review within one week following completion of each survey. The Plan design shall be based upon site conditions, project activities, and species present or likely to be present during all construction activities. The Plan shall include buffer(s), which will be determined based upon the life history of the individual species, species sensitivity to noise, vibration, and general disturbance, current site conditions (screening vegetation, terrain, etc.), ambient levels of human activity, the various project-related activities necessary to construct the project, and other features. Permittee, or any person acting on behalf of Permittee, is not relieved from complying with Fish and Game Code sections 3503 (bird nests and eggs) and 3503.5 (birds of prey). This Plan shall include a sample of the Nest Log, which tracks each nest and its outcome. The Nest Log shall be submitted to CDFW every two weeks. 3 The Permittee may propose an alternative plan for avoidance of nesting birds for CDFW concurrence.					
Avoidance and Minimization Measure 2.12	**Least Bell's Vireo, Southwestern Willow Flycatcher, and Coastal California Gnatcatcher.** Prior to initiation of project activities within Whitter Narrows portion of the project, three focused surveys following USFWS protocol for least Bell's vireo and southwestern willow flycatcher, shall be conducted during the breeding season. No surveys are needed for least Bell's Vireo and southwestern willow flycatcher if work is conducted between September 16 to March 14, outside the breeding season. Prior to initiation of project activities within gnatcatcher habitat, three focused pre-construction surveys following USFWS protocol for California gnatcatcher shall be conducted during the breeding season. The physical extent of the survey area shall be approved by CDFW prior to commencing surveys and shall include indirectly affected and buffer areas. Survey results shall be submitted in writing to CDFW for review. 2.12.1 Survey protocol for least Bell's vireo can be found at: http://www.fws.gov/pacific/ecoservies/endangered/recovery/documents/LeastBellsVireoQuals.pdf 2.12.2 Survey protocol for southwestern willow flycatcher can be found at: http://www.fws.gov/pacific/ecoservies/endangered/recovery/documents/SWWFlycatcher.2000.protocol.pdf 2.12.3 Survey protocol for coastal California gnatcatcher can be found at: http://www.fws.gov/ventura/docs/species/protocols/cagn/coastal-gnatcatcher_survey-guidelines.pdf 2.12.4 If least Bell's vireo, southwestern willow flycatcher, or coastal California gnatcatcher are present, the following avoidance measures shall be implemented: 2.12.4.1 No construction shall take place between March 15 and September 15.	N/A	N/A	N/A	N/A	No portion of Whittier Narrows overlaps with the Project Component covered in this Notice to Proceed Request (NTPR-1). Therefore, these measures do not apply to this NTPR-1.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	2.12.4.2 If least Bell's vireo or southwestern willow flycatcher are present and the avoidance measures identified above cannot be implemented, take may result, and an Incidental Take Permit (ITP) should be applied for and obtained from the CDFW. An ITP will include the following measures for minimization and mitigation: construction buffers, a biological monitor, sound walls, and habitat replacement. If coastal California gnatcatcher is present and the avoidance measures identified above cannot be implemented, Permittee shall require and follow the direction of a federal take permit.					
Avoidance and Minimization Measure 2.13 (*as revised August 23, 2017*)	Burrowing Owls. Burrowing Owls: Permittee shall have the Designated Biologist perform protocol surveys for burrowing owls no more than 30 days prior to clearing any area following the Burrowing Owl Consortium protocol guidelines (http://www.dfg.ca.gov/wildlife/nongame/survey monitor.html#Birds). Survey results including negative findings, analysis, and recommendations, along with the field notes and documentation of the verified reference site shall be provided to CDFW no more than seven (7) days of completion of field surveys. Permittee shall inspect all burrows that exhibit typical characteristics of owl activity no sooner than three days prior to any site preparation activities. If it is evident that the burrows are actively being used, Permittee shall not initiate project activities until there is no sign that the burrows are being used by adults or juvenile owls.	Yes	Yes	N/A	AMEC 2009b, 2009c; ICF 2010d, 2010e	Pre-construction burrowing owl surveys will be conducted for the Project Component. Specifically, SCE intends to perform take avoidance surveys, as specified in Appendix D of the 2012 Staff Report on Burrowing Owl Mitigation, within 150 meters (500 feet) of the Project Component, no more than 30 days prior to the start of construction.
Avoidance and Minimization Measure 2.14	**Demarcate Work Area Boundary**. In consultation with the Designated Biologist, the Permittee or Designated Representative shall demarcate the outer perimeter of the work area to prevent damage to adjacent habitat and to provide visual orientation to its limits. Marking shall be in place during all periods of operation. All persons employed or otherwise working on the project site shall be instructed about the restrictions that the marking represents. Permittee shall remove all temporary flagging, fencing, and/or barriers from the project site and vicinity of the stream upon completion of project activities.	Yes	Yes	N/A	N/A	Construction activities, vehicular traffic, and storage of construction materials will be restricted to approved access roads and established construction areas indicated by flagging, fencing, and/or signage. Exclusionary fencing will be installed prior to the start of construction activities around laydown and work and staging areas, where necessary and appropriate, to prevent inadvertent encroachment.
Avoidance and Minimization Measure 2.15	**Vegetation Removal.** Only trees marked for removal and approved by CDFW shall be removed. No additional native trees shall be removed or damaged without prior consultation and approval of a CDFW representative. Disturbance, trimming, or removal of other vegetation shall be kept to the minimum necessary to complete project-related activities. All such trimming shall be conducted using hand saws and hand tools.	Yes	Yes	N/A	N/A	Efforts such as flagging, WEAP, and avoidance would be made to minimize vegetation removal and permanent loss at construction sites. Only trees approved by CDFW will be removed.
Avoidance and Minimization Measure 2.16	**Hours of Operation and Lighting.** Permittee's construction activities shall take place during daylight hours only to the maximum extent feasible. Any night work conducted shall direct work lighting away from any adjacent sensitive habitat.	Yes	N/A	N/A	N/A	Work will be conducted during daylight hours to the extent feasible.
Avoidance and Minimization Measure 2.17	**Herbicide Application.** The Permittee shall apply any herbicides in accordance with state and federal law. No herbicides shall be used where Threatened or Endangered species occur. No herbicides shall be used when wind velocities are above 5 miles per hour or when nesting birds could be exposed.	Yes	N/A	N/A	N/A	As described in MM BR-4 and the Noxious and Invasive Weed Control Plan, herbicides will be applied in accordance with state and federal law.
Avoidance and Minimization Measure 2.18	**Authorized Uses of Herbicides.** No herbicides shall be used on native vegetation unless specifically authorized, in writing, by CDFW. A small amount of selective trimming of native species (e.g. willow, oak and sycamore) may occur to prevent overspray of herbicide from reaching these branches, but only	Yes	N/A	N/A	N/A	As described in MM BR-4 and the Noxious and Invasive Weed Control Plan, all herbicides will be approved by CDFW prior to use.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	as provided within the conditions of this Agreement. Native vegetation may only be trimmed; individual plants shall not be removed. Material in excess of three (3) inches DBH shall require specific notice to and consultation with CDFW.					
Avoidance and Minimization Measure 2.19	**Concrete – Primary Containment.** No concrete or any cement product may be poured during a rain. Cement shall not be poured in or near a flowing stream, to reduce the potential for significant adverse impacts to the stream, water, or biota without prior approval. To prevent the release of materials that may be toxic to fish and other aquatic species, the poured concrete structure(s) shall be isolated from water and allowed to dry/cure for a minimum of 30 days. During this period, curing concrete will be covered during rain events (e.g., tarpaulin). The Permittee shall install the necessary containment structures to control the placement of wet concrete and to prevent it from entering into the channel outside of those structures.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction. This requirement has been included within the WEAP and therefore will be communicated to construction contractors working on the Project. In addition, biological monitors and Qualified SWPPP Practitioner will ensure compliance with this measure.
Avoidance and Minimization Measure 2.20	**Concrete – Designated Monitor.** At all times when the Permittee is pouring or working with wet concrete there shall be a designated monitor to inspect the containment structures and ensure that no concrete or other debris enters into the channel outside of those structures.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.21	**Maintain Water Quality.** Permittee shall divert flow in a manner that prevents turbidity, siltation, or pollution and provides flows to downstream reaches. Vehicles shall not be driven or equipment operated in water-covered portions of the stream. If conditions arise, or change, in such a manner as to be considered deleterious to the stream or wildlife, Permittee shall immediately consult CDFW for further actions.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.22	**Unauthorized Materials.** Any materials placed in seasonally dry portions of a stream that could be washed downstream or could be deleterious to aquatic life shall be removed prior to inundation by high flows.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.23	**Substrate.** Rock, gravel, and/or other materials shall not be imported to, taken from or moved within the bed and or banks of the stream, except as otherwise addressed in the project description.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.24	**Trenching/Excavation Spoils.** No castings or spoil from the trenching/excavation operations shall be placed on the stream side of the Project site.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.25	**Spoils.** Spoil storage sites shall not be located within a stream, where spoils can be washed back into a stream, or where it will cover aquatic or riparian vegetation.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.26	**Erosion Control Measures.** Permittee shall utilize erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter a river, stream, or lake. Furthermore, any type of erosion control shall be weed-free. Permittee shall stabilize all exposed/disturbed areas within the project site to the greatest extent possible. Permittee or Designated Representative shall monitor erosion control measures during and after each storm event and repair and/or replace ineffective measures immediately. Permittee shall make modifications, repairs and improvements to erosion control measures whenever it is needed. The Permittee or Designated Representative shall monitor instream turbidity levels during project activities and shall adhere to those specifications for turbidity set forth by the Regional	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Water Quality Control Board's Conditional Waiver of Waste Discharge Requirements issued for this project.					
Avoidance and Minimization Measure 2.27	**Sediment Control.** Permittee shall implement Best Management Practices where sediment from project-related activities placed in upland areas might likely be washed into the stream. Sediment from project-related activities shall not be placed where it is likely to have a negative impact on native trees.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.28	**Erosion Control.** Any erosion control shall exclude the use of plastic or "hard" netting. If netting is to be used, it must be flexible (e.g., "soft" hemp) so that snakes or other animals do not become trapped in the netting.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.29	**Runoff Control.** Preparation shall be made so that runoff from steep, erodible surfaces will be diverted into stable areas with little erosion potential. Frequent water checks shall be placed on dirt roads, cat tracks, or other work trails to control erosion.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.30	**Contaminated Site Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a flowing stream, dry ephemeral stream or into storm drains. Such water shall be settled, filtered, or otherwise treated prior to discharge back into the water body. Permittee shall place and maintain silt barriers, such as "biologs," or filter fabric silt fencing, around the storm drain inlets until the threat of erosion from surrounding drainage ceases.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.31	**Staging and Vehicle Storage.** Staging/storage areas for equipment and materials shall be located outside of CDFW jurisdictional areas in a location selected due to its non-vegetated status.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.32	**Operating Equipment and Vehicle Leaks.** Any equipment or vehicles driven and/or operated within or adjacent to the ephemeral drainage shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat. No equipment maintenance or fueling shall be done within or near any stream channel or lake margin where petroleum products or other pollutants from the equipment may enter these areas. Stationary equipment such as motors, pumps, generators, and welders, located within or adjacent to the stream/lake shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as extra boom, absorbent pads, skimmers, shall be on site prior to the start of project-related activities. No equipment maintenance shall be done within or near any stream channel or lake margin where petroleum products or other pollutants from the equipment may enter these areas under any flow.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.33	**Remove Cleared Material from Stream.** All trimmed or cleared material/vegetation shall be removed from the area and deposited where it cannot re-enter the stream.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.34	**Pollutants and Debris.** No debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products or any other substances which could be hazardous to aquatic life, or other organic or earthen material from any logging, construction, or other associated project-related activity shall be allowed to contaminate the soil and/or enter into or placed where it may be washed by rainfall or runoff into, waters of the State. Any of these materials, placed within or where they may enter the stream, by the Permittee or any party working	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	under contract, or with the permission of the Permittee, shall be removed immediately. When project-related activities are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of the stream.					
Avoidance and Minimization Measure 2.35	**Hazardous Substances.** Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter the stream by Permittee or any party working under contract, or with the permission of Permittee, shall be removed immediately.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.36	**Spill Cleanup.** Permittee shall begin the cleanup of all oil/toxic material spills immediately. CDFW shall be notified immediately by the Permittee of any spills and shall be consulted regarding cleanup procedures. The Permittee shall have all spill clean-up equipment on site during construction.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.37	**Pollution Compliance.** The Permittee shall comply with all litter and pollution laws. All contractors, subcontractors and employees shall also obey these laws and it shall be the responsibility of the Permittee to insure compliance.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.38	**Wash Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter the stream or placed in locations that may be subjected to high storm flows.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.39	**Pick Up Debris.** Permittee shall pick up all debris and waste daily. Permittee shall dispose of all Project generated debris, materials and rubbish in a legal manner. The Permittee shall remove all human generated debris, such as yard and farm cuttings, broken concrete, construction waste, garbage and trash. The Permittee shall remove washed out culverts, and other construction materials, that the Permittee places within, or where they may enter, the stream.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.40	**Pollution Clean-up.** The clean-up of all spills shall begin immediately. CDFW shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures. Clean up equipment such as extra boom, absorbent pads, skimmers, shall be on site.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.41	**Trash Receptacles.** The Permittee shall install and use fully covered trash receptacles with secure lids (wildlife proof) that contain all food, food scrapes, food wrappers, beverage and other miscellaneous trash generated by work force personnel.	Yes	N/A	N/A	N/A	All construction-generated trash and microtrash will be placed in fully covered trash receptacles with secure lids.
Avoidance and Minimization Measure 2.42	**Remove Temporary Flagging, Fencing, and Barriers.** Permittee shall remove all temporary flagging, fencing, and/or barriers from the project site and vicinity of the stream upon completion of project activities.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Avoidance and Minimization Measure 2.43	**Invasive Plant Control/Eradication.** To minimize the spread of invasive plant species to uninfested areas within and outside of the project site, Permittee shall implement control and eradication activities, to the extent practicable, prior to the initiation of ground-disturbing activities. Permittee shall utilize control and eradication methods that are specific to the target species, avoid the spread and proliferation of other invasive plant species, and minimize damage to and/or removal of native plant species. All nonnative and invasive plants controlled or eradicated at the project site shall be removed and disposed of in	Yes	N/A	N/A	N/A	As specified in the Noxious and Invasive Weed Control Plan (NIWCP), SCE and its contractor(s) will comply with this measure during construction.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	a manner that prevents the introduction and establishment of those species to new areas.					
Avoidance and Minimization Measure 2.44	**Invasive Species Education Program.** Permittee shall conduct an Invasive Species Education Program for all persons working within the project site prior to the commencement of any project activities during the pre-construction meeting. Additionally, this instruction shall be included for any new workers starting work after initial commencement of project activities prior to their performing any work within the project site. The program shall consist of a presentation from a qualified biologist that includes a discussion of the invasive species currently present within the project site as well as those that may pose a threat to or have the potential to invade the project site. The discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and impacts. The program shall also include a discussion of BMPs to be implemented at the project site to avoid the introduction and spread of invasive species into and out of the project site. The program shall be repeated annually for projects extending more than one year. Copies of program materials shall be maintained at the project site for workers to reference as needed and shall be provided to any new workers prior to their performing any work within the Project site. For this requirement an electronic copy of the program materials shall suffice.	Yes	N/A	N/A	N/A	Invasive Species Education training will be required for all personnel working in the field on the Project prior to commencement of any construction activities and will be repeated yearly. Invasive Species Education is a component of the WEAP training.
Avoidance and Minimization Measure 2.45	**Invasive Species.** Permittee shall conduct project activities in a manner that prevents the introduction, transfer, and spread of invasive species, including plants, animals, and microbes (e.g., algae, fungi, parasites, bacteria, etc.), from one project site and/or watershed to another. Prevention BMPs and guidelines for invasive plants can be found on the California Invasive Plant Council's website at: http://www.cal-ipc.org/ip/prevention/index.php and for invasive mussels and aquatic species can be found at the Stop Aquatic Hitchhikers website: http://www.protectyourwaters.net/.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction. Invasive Species Education is a component of the WEAP training.
Avoidance and Minimization Measure 2.46	**Inspection of Project Equipment.** Permittee shall inspect all vehicles, tools, waders and boots, and other project-related equipment and remove all visible soil/mud, plant materials, and animal remnants prior to entering and exiting the stream and/or between each use in different watersheds.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction. This measure is a component of the WEAP training.
Avoidance and Minimization Measure 2.47	**Notification of Invasive Species.** Permittee shall notify CDFW immediately if an invasive species not previously known to occur within the project site is discovered during project activities by submitting a completed Suspect Invasive Species Report (available online at: http://www.dfg.ca.gov/invasives/inv_reporting/sightingReport.html) and photos to the Invasive Species Program by email at: invasives@wildlife.ca.gov. Notification may also be provided by calling (866) 440-9530. Upon receiving notification, CDFW will provide Permittee with guidance for further action as appropriate to the species.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Compensatory Measure 3.1	**Required Compensatory Mitigation.** To compensate for the permanent impacts to approximately 1.31 acres of non-native riparian woodland, 1.33 acres of mulefat scrub interspersed with non-native vegetation, and 0.04 acres of wetland habitat as well as for the temporary impacts to 0.26 acres of non-native riparian woodland, 0.06 acres of mulefat scrub interspersed with non-native vegetation, 0.23 acres of mulefat and elderberry riparian woodland, 0.04 acres of non-native grassland, Permittee shall mitigate with preservation of 0.22 acre of mulefat thickets, 0.40 acre of waters of the state, 5.80 acres of	Yes	N/A	N/A	N/A	Final compensatory mitigation is described in both the HRMP and the Compensatory Mitigation Plan, which is an appendix to the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Mexican rush marsh, and creation or restoration of 4.29 acres of mulefat and elderberry riparian scrub habitat.					
Compensatory Measure 3.2	**Mitigation Requirements.** Permittee has previously purchased 0.22 acre of mulefat thickets, 0.40 acre of waters of the state, and 5.80 acres of Mexican rush marsh preservation credit from Petersen Ranch Mitigation Bank, which shall be allocated to this Agreement's mitigation requirements. Permittee shall either purchase an addition 4.29 acres of riparian restoration or reestablishment credits at Soquel Mitigation Bank OR perform Permittee Responsible Mitigation (PRM) as described in Conditions 3.2.2 to 3.12. 3.2.1 For a mitigation bank, Permittee shall obtain CDFW approval of the credit type (restoration/reestablishment, or preservation/enhancement may be at a higher mitigation ratio), bank sponsor, credit amount, habitat type(s) and map of the bank jurisdiction. The Permittee shall submit a record of purchase to CDFW or an executed Letter of Credit (Condition 4.1) prior to initiation of project activities. 3.2.2 For a Permittee Responsible Mitigation, the Permittee shall provide a brief description of the mitigation proposed including a map of site, type of mitigation (restoration or reestablishment, or preservation/enhancement may be at a higher mitigation ratio), habitat type, restoration contractor, long term land manager, conservation easement holder and endowment holder prior to initiation of project activities.	Yes	N/A	N/A	N/A	Final compensatory mitigation is described in both the HRMP and the Compensatory Mitigation Plan, which is an appendix to the HRMP.
Compensatory Measure 3.3	**Permittee Responsible Mitigation Requirements.** All mitigation requirements or proposals and plans as depicted in condition 3.3.1 to 3.3.7 shall be submitted to CDFW for review and approval prior to initiating the Project authorized by this Agreement. CDFW retains the right to require more mitigation should the proposed mitigation not be adequate to compensate for the impacts. Additional mitigation may be required if enhancement or preservation is proposed and/or the habitat proposed for mitigation is of lower functions and values than the habitat being impacted. If additional temporal impacts (time project activities and initiation of mitigation) occur, then the compensatory mitigation shall be increased. Therefore, for each year past one year of Project impacts authorized by this Agreement, that the mitigation is delayed, the mitigation shall be increased by 10 percent of the original mitigation acreage requirement detailed above. 3.3.1 **Mitigation Creation and Restoration Plan.** Permittee shall submit a draft Mitigation Creation and Restoration Plan (MCRP) to CDFW for review and approval that includes restoration or reestablishment of 4.29 acres of mulefat and elderberry riparian scrub habitat. Restoration implementation involves methods for restoring, and maintaining (e.g., weeding, replacement planting, supplemental watering) and monitoring the restored area for a period of five years. The MRCP shall include, at a minimum: (a) mitigation location; (b) survey information of a reference site; (c) planting location, methodology, and schedule; (d) list native plant (tree, shrub, and grass) species to be used, container sizes (no more than one gallon), and seeding rates; (e) description of the irrigation methodology, if necessary; (f) measures to control exotic vegetation on site; (g) schedule that outlines all foreseeable activities necessary for the mitigation plan (h) monitoring and reporting procedures; (i) sample of the data collection sheet; (j) specific success	Yes	N/A	N/A	N/A	The requirements of this compensatory measure are addressed in the HRMP and the Compensatory Mitigation Plan, which is included as Attachment B to the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	criteria based on a reference site; and (k) corrective actions to be taken when restoration activities do not meet the proposed success criteria. The MCRP shall also include the following measures: 3.3.2 **Restoration/Mitigation Success Criteria.** The MCRP shall identify the success criteria for the habitats specified above shall be compared against an appropriate reference site with as good or better quality habitat. The reference site shall be approved by CDFW. The success criteria shall include percent cover (both basil and vegetation), species diversity, abundance, and any other measures of success deemed appropriate by CDFW. Success criteria shall be separated into vegetative layers (tree, shrub, grass, and forb), and each layer shall be compared to the success criteria of the reference site to ensure one species or layer does not disproportionally dominate a site, but instead mimic the conditions of the reference site. The MCRP shall have adequate detail regarding the sampling plan so that it can be duplicated by different people and shall include a sample data collection sheet that shows appropriate data to be collected per the proposed sampling methodology. Permittee shall be responsible for any cost incurred during the restoration/mitigation or in subsequent corrective measures. 3.3.3 **Mitigation Location Restraints.** Mitigation shall not occur in fuel modification zones, future project areas, or areas of maintenance. 3.3.4 **Restoration Specialist.** The MCRP shall be prepared by persons with expertise in southern California desert ecosystems and native plant re-vegetation techniques (restoration specialist). Planting, maintenance, monitoring and reporting activities shall be overseen by the restoration specialist familiar with restoration of native plants. 3.3.5 **Local Sources.** Plant material for revegetation shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from randomly selected native trees and shrubs occurring locally within the same drainage. 3.3.6 **Native Plant Nursery.** Any replacement tree/shrub stock, if used, which cannot be grown from cuttings or seeds, shall be obtained from a native plant nursery, be ant-free, and shall not be inoculated to prevent heart rot. 3.3.7 **Mitigation and Monitoring Reports.** Permittee shall have the qualified restoration specialist monitor the recovery of plant, wildlife, and aquatic resources in the area following mitigation implementation. Monitoring of plant, wildlife, and aquatic resources shall be done in summer and winter of each year, through the term of restoration. The results and analysis shall be submitted with the annual MCRP annual report to CDFW by Feb. 1 of each year for 5 years after mitigation implementation. This report shall include the status and any success trends for the success criteria outlined in the MCRP. Photos from designated photo stations shall be included. 3.3.8 **Mitigation Success.** After the 5th monitoring year, if the site has met the success criteria outlined in the MCRP plan, CDFW may request a site visit to determine if the mitigation portion of the Agreement is deemed complete. The site should be free of trash and any irrigation infrastructure shall be removed if it was used (unless there is an acceptable justification for leaving the irrigation system in place).					

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
Compensatory Measure 3.4	**Long Term Management.** Permittee shall fund the perpetual management of the mitigation lands by a CDFW-approved conservancy or similar entity that has passed the CDFW due diligence process. A draft agreement formed between the Permittee and the chosen organization shall be submitted to CDFW within one (1) year of final signature of this Agreement. 3.4.1 **Long Term Management Plan (LTMP).** Permittee shall prepare, or fund the preparation of, an Long Term Management Plan (LTMP) designed to sustain or surpass the habitat quality of the mitigation site at CDFW sign-off, in perpetuity. At a minimum, the LTMP shall identify: (1) an estimated description of the physical conditions of the mitigation site (at sign-off), including water resources and habitat types, and a map that identifies the location of the site; (2) goals related to sustaining habitat quality, wildlife usage, and overall function of the mitigation site; and (3) management strategies proposed to meet those goals, including a monitoring and maintenance schedule, and a list of contingency measures. The CDFW-approved conservation entity shall be responsible for implementing the LTMP and shall submit a Management Report every five (5) years documenting, at a minimum: (1) management activities completed within the previous five year term, including: (a) any remedial measures completed; (b) details of non-native species removal including: (i) species removed, (ii) the amount and frequency of removal, and (iii) the techniques used; and (c) enforcement activity necessary; (2) an assessment of overall habitat quality within the mitigation site, including: (a) percent native and non-native vegetation cover, (b) any shifts in habitat type, (c) any loss of habitat cover, (d) any change in water resources, and (e) any new non-native species observed; (3) an evaluation of the success or failure of management strategies implemented, and any changes to management strategies proposed in response to the successes or failures. The Management Report shall include photos documenting the management activities. Permittee shall submit the LTMP to CDFW for review and approval within one (1) year of final signature of this Agreement.	Yes	N/A	N/A	N/A	The requirements of this compensatory measure are addressed in the HRMP and the Compensatory Mitigation Plan, which is included as Attachment B to the HRMP.
Compensatory Measure 3.5	**Conservation Easement.** A conservation easement, or similar protection measure acceptable to CDFW, shall be recorded over the mitigation site of no less than 4.29 acres to protect fish and wildlife in perpetuity. The CDFW easement form (please contact CDFW Regional Office or R5LSACompliance@wildlife.ca.gov for the current easement form) shall be executed by the Permittee and provided to the CDFW within one year of initiating the Project authorized by this Agreement. The Permittee shall obtain CDFW approval of any conservation easement (where CDFW is grantee or Third Party) before its recordation. An endowment fund or other maintenance-funding source acceptable to CDFW shall be created for the management of these lands in perpetuity. 3.5.1 **Conservation Easement Grantee.** A CDFW-approved non-profit organization qualified pursuant to California Government Code section 65965, or CDFW-approved public agency (collectively, "approved entity") may hold fee title or act as grantee for a conservation easement over the mitigation area. If an approved entity holds a conservation easement, CDFW shall be named third party beneficiary.	Yes	N/A	N/A	N/A	The requirements of this compensatory measure are addressed in the HRMP and the Compensatory Mitigation Plan, which is included as Attachment B to the HRMP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
Compensatory Measure 3.6	**Property Analysis Record for Establishment of Mitigation Lands.** Within one (1) year of final signature of this Agreement, the Permittee shall prepare a Property Analysis Record (PAR) or PAR-equivalent analysis (hereinafter "PAR") negotiated with the approved land manager to calculate the amount of funding necessary to ensure land acquisition, planning and engineering, construction, monitoring, and legal fees for the 4.29-acre mitigation site subject to this Agreement.	Yes	N/A	N/A	N/A	The requirements of this compensatory measure are addressed in the Compensatory Mitigation Plan, which is included as Attachment B to the HRMP.
Compensatory Measure 3.7	**Property Analysis Record for In-perpetuity Management of Mitigation Lands.** A minimum of three (3) months prior to acquisition or recordation of a conservation easement on the mitigation land the Permittee shall conduct a PAR-like analysis once the mitigation area and land manager has been identified to determine the appropriate endowment amount to fund the in-perpetuity management of the 4.29-acre mitigation site. After CDFW approves the PAR, Permittee shall provide the required endowment to either: 1) CDFW (interest from the endowment amount shall be available for the long term operation, management, and protection of the mitigation lands, including reasonable administrative overhead, biological monitoring, improvements to biological carrying capacity, law enforcement measures, and any other action designed to protect or improve the habitat values of the mitigation lands. Monies received by CDFW pursuant to this Condition shall be deposited in a special deposit account established pursuant to Fish and Game Code section 13014.); 2) endowment funds may be held by a non-profit conservation entity authorized to hold such funds.	Yes	N/A	N/A	N/A	The requirements of this compensatory measure are addressed in the Compensatory Mitigation Plan, which is included as Attachment B to the HRMP.
Compensatory Measure 3.8	**Right to Deny.** CDFW has the right to deny the proposed mitigation site/conservation easement if, on review of the preliminary title report or Phase One Environmental Assessment, CDFW determines the site does not have suitable conservation value.	Yes	N/A	N/A	N/A	Measure noted.
Compensatory Measure 3.9	**Mitigation for Unauthorized Impacts.** Permittee shall mitigation at a minimum 5:1 ratio for impacts beyond those authorized in this Agreement. In the event that additional mitigation is required, the type of mitigation shall be determined by CDFW, and may include creation, restoration, enhancement, and/or preservation.	Yes	N/A	N/A	N/A	Measure noted.
Compensatory Measure 3.10	**Prohibited Plant Species.** Permittee shall not plant, seed or otherwise introduce invasive exotic plant species. Prohibited exotic plant species include those identified in the California Exotic Pest Plant Council's database, which is accessible at: http://www.cal-ipc.org/ip/inventory/weedlist.php.	Yes	N/A	N/A	N/A	SCE and its contractor(s) will comply with this measure during construction.
Compensatory Measure 3.11	**Mitigation Documentation Requirements for Review and Comment.** For PRM, prior to initiation of project activities, the Permittee shall provide CDFW with the following for the proposed mitigation site for review and comment: Phase One Environmental Site Assessment Report, and any required technical reports (e.g., jurisdictional delineation, hydrology studies, mineral risk assessment) for sites proposed for preservation, creation, restoration, and/or enhancement activities.	Yes	N/A	N/A	N/A	No permittee-responsible mitigation is proposed for impacts resulting from the Project Component.
Compensatory Measure 3.12	**Mitigation Documentation Requirements for Review and Approval.** Prior to initiation of project activities, the Permittee shall provide CDFW with the following for review and approval: mitigation proposal and draft Letter of Credit. If the approved mitigation is PRM, the Permittee shall provide the MCRP and draft conservation easement of the mitigation site for CDFW review and approval.	Yes	N/A	N/A	N/A	No permittee-responsible mitigation is proposed for impacts resulting from the Project Component.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	3.12.1 For PRM, within one year of execution of this Agreement, Permittee shall provide the LTMP, PAR, and draft agreement between Permittee and entity implementing the LTMP.					
Biological Opinion Conservation Measures						
CM 1	To offset unavoidable impacts to 1.4 acres of coastal sage scrub and adjacent vegetation communities supporting two pairs of gnatcatchers, SCE will implement one of two options (Onsite or Offsite): a. Onsite Preservation Area: Restore, preserve, and manage between 8 and 10 acres of coastal sage scrub (see CM 2) within an 11-acre conservation area within the project site, adjacent to the new substation (Figure 4).3 Restoration of coastal sage scrub on the project site is anticipated to be initiated within 1 to 5 years of impacts to vegetation where gnatcatchers were observed adjacent to the Mesa Substation; or b. Offsite Preservation Area: Restore a minimum of 16 acres of coastal sage scrub within an SCE right of way (ROW) adjacent to habitat preserved and managed by the Puente Hills Habitat Preservation Authority and preserve and manage a minimum of 22 acres4 of contiguous habitat within the ROW (Figure 5). Restoration of coastal sage scrub offsite will to be initiated within 1 year of impacts to vegetation where gnatcatchers were observed adjacent to the Mesa Substation.	Yes	N/A	N/A	N/A	The HRMP has been developed in coordination with the appropriate agencies and will describe the chosen mitigation strategy.
CM 2	A revised HRMP, describing the chosen option (Onsite or Offsite) will be submitted by SCE for approval by the Service within 90 days of issuance of the 404 permit for the project. The revised HRMP will include a description and map of the habitats to be restored, methods of site preparation and planting, a plant palette, and a 5-year monitoring and maintenance plan with specific quantitative performance criteria for evaluating the progress of the habitat restoration efforts. Restoration methods will be designed to avoid adverse effects to the gnatcatcher. Because the timing of restoration on the project site is uncertain, the HRMP will include a strategy to account for temporal loss of coastal sage scrub (i.e., loss of gnatcatcher breeding, feeding, and sheltering habitat and related impacts to individual gnatcatchers) if the Onsite Preservation Area option is chosen.	Yes	N/A	N/A	N/A	The HRMP has been developed in coordination with the appropriate agencies and will be implemented during all applicable phases of construction. It will include a discussion of the temporal loss of coastal sage scrub, and be submitted within 90 days of issuance of the 404 permit for the project.
CM 3	The chosen restoration site will be preserved in perpetuity as open space for native wildlife with either a deed restriction (Onsite Preservation Area) or conservation easement (Offsite Preservation Area). The draft site protection document will be approved by the Service, and SCE will provide a copy of the final recorded site protection document when it requests Service approval that habitat restoration activities identified in the revised HRMP have met final performance criteria. Site protection will occur as follows: a. Onsite Preservation Area: A total of 11 acres will be preserved adjacent to Mesa Substation through a recorded deed restriction approved by the Service, with the Service as a third party beneficiary. Provisions in the deed restriction will allow for SCE to conduct facilities-related maintenance activities in the permanent impact area (i.e., Figure 4, "Permanent Impacts") and to conduct habitat maintenance and monitoring activities as described in a	Yes	N/A	N/A	N/A	A site protection document that meets the requirements of this measure will be provided to the USFWS when it requests approval that habitat restoration activities identified in the revised HRMP have met final performance criteria.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	Service-approved long-term management plan (see CM 4). The deed restriction will also allow for expansion of SCE facilities provided that the expanded facilities do not impact more than 1 acre within the conserved area and that the minimum amount of coastal sage scrub identified in CM 2 is maintained; or b. Offsite Preservation Area: A minimum of 22 acres will be preserved within the SCE ROW through a recorded conservation easement granted to a conservation organization approved by the Service, with the Service as a third party beneficiary. The conservation easement will prohibit all activities that significantly disturb wildlife, or detrimentally impact habitat within the easement but will allow for SCE to conduct habitat maintenance and monitoring activities as described in a Service-approved long-term management plan (see CM 4). It is also anticipated that SCE will continue to maintain existing facilities immediately adjacent to the conservation easement, consistent with CM 16.					
CM 4	A Service-approved long-term management plan (LTMP) will be implemented within the chosen mitigation site to ensure habitat values for the gnatcatcher are preserved in perpetuity. The LTMP will describe the legal protection, funding, responsibilities, and ongoing programs designed to maintain preserved habitat consistent with the final performance criteria. The LTMP will include, but not be limited to, enforcement of the terms of the conservation easement (i.e., compliance monitoring), restrictions on recreational use, control of unauthorized access (e.g., maintenance of signs, fencing, and/or gates, as applicable), removal of nonnative plants and trash, sensitive species monitoring, and adaptive management strategies for foreseeable circumstances (e.g., fire, damages associated with unauthorized access). Management methods will be designed to avoid adverse effects to the gnatcatcher.	Yes	N/A	N/A	N/A	A LTMP will be provided to the USFWS in accordance with the requirements of this measure.
CM 5	Funding for attainment of the performance criteria of the Final HRMP and a non-wasting endowment for implementation of the LTMP will be secured by SCE in the form of financial assurances [e.g., a performance bond or irrevocable letter of credit (LOC)]. SCE will not begin vegetation removal or construction-related activities in occupied gnatcatcher habitat, until the financial assurances have been provided in a manner reviewed and approved by the Service. The approved funding amount ($4,912,905.94) will cover the full estimated cost of the higher-cost option (Offsite Preservation Area) plus a 20 percent contingency. Once established, documentation that the financial assurances are still in effect will be provided to the Service annually. The financial assurances will be released once the chosen option has been fully funded by SCE, as confirmed in writing by the Service.	Yes	N/A	N/A	N/A	SCE has provided financial assurances to the USFWS in the form of a performance bond. SCE will not begin construction until after the USFWS has approved performance bond.
CM 6	Prior to releasing the financial assurances, SCE will fund a non-wasting endowment held by an independent agent approved by the Service in an amount sufficient to fund implementation of the LTMP in perpetuity. The endowment amount will be determined using a Property Analysis Record or an equivalent process, which will be reviewed and approved by the Service. A Service-approved land manager, distinct from the agent holding the endowment, will be responsible for implementing the actions identified in the LTMP with funds distributed from the endowment. The final endowment amount that is transferred to the endowment holder will reflect the percentage change in the California Consumer Price Index from the time the initial cost estimation is completed. SCE will be responsible for maintaining final performance criteria within the mitigation site until the non-	Yes	N/A	N/A	N/A	SCE will comply with this measure.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	wasting endowment is transferred and funds are accessible by the approved land manager.					
CM 7	The new substation lighting will be shielded so as not to illuminate adjacent habitat. The lighting will be inspected following construction, and a report will be provided to the Service documenting the efficacy of the lighting design.	Yes	N/A	N/A	N/A	A qualified SCE-approved biologist will monitor vegetation removal within coastal California gnatcatcher habitat, and ensure that substation lighting is directed away from the "Restricted Use Area".
CM 8	A biologist(s) (The biologist will be a trained ornithologist with at least 40 hours of observation in the field for the gnatcatcher and documented experience of at least 20 hours of locating and monitoring nests of the gnatcatcher), approved by the Service, will be retained by SCE to conduct activities as specified in the measures below. At least 7 days prior to initiating project activities, SCE will submit to the Service, in writing, the name(s), any recovery permit numbers, and resumes of all proposed biologists. Proposed activities will not begin until an authorized biologist has been approved by the Service. The approved biologist(s) will be provided a copy of this biological opinion and will have the authority to halt construction activities that do not comply with the construction-related CMs (i.e., CM 9 through CM 14).	Yes	N/A	N/A	N/A	SCE has submitted the name(s), any recovery permit numbers, and resumes of all proposed biologists to the USFWS for approval. Approval of the biologists is anticipated by September 26, 2017.
CM 9	Prior to the start of construction activities, the approved biologist(s) will conduct a contractor education program for construction personnel that will include: a) a description of the gnatcatcher and its habitat on the project site, b) construction limits, and c) the conservation measures that will be implemented in conjunction with project construction (i.e., CM 9 through CM 14).	Yes	N/A	N/A	N/A	A complete Worker Environmental Awareness Program (WEAP) training has been prepared, including a PowerPoint presentation with audio voice-over, species/resource cards, acknowledgment forms and a hard hat sticker to track who has taken the WEAP training. The WEAP was approved by the CPUC on April 7, 2017, and revised on September 25, 2017 to include additional details regarding these BO measures (CM 9 through CM 14). Sign-in sheets for those who attended WEAP training will be submitted monthly.
CM 10	Under the supervision of the approved biologist(s), preserved habitat adjacent to the outer limits of disturbance of the Mesa Substation, referred to as "Restricted Use Area" (Figure 4), will be delineated by bright orange plastic fencing, stakes, flags, or markers that are clearly visible to personnel on foot and in heavy equipment. No vegetation removal, grading, or deposition of waste dirt/rubble will occur in habitat areas outside the outer limits of disturbance.	Yes	N/A	N/A	N/A	Staking for the "Restricted Use Area" will be installed on September 26, 2017, and maintained for the duration of the Project.
CM 11	To minimize the potential for degradation of vegetation adjacent to temporary and permanent impact areas, the following measures will be implemented during project construction: a. Silt fencing, siltation basins, gravel bags, or other controls necessary to stabilize the soil in cleared or graded areas will be installed within the outer limits of disturbance to minimize erosion and siltation during initial vegetation clearing and project construction. Erosion and sediment control measures will be maintained in good repair until completion of construction. b. All equipment maintenance, staging, and dispersion of fuel, oil, coolant, or any other such activities will be restricted to designated areas within the project impact limits. These designated areas will be located in such a manner as to prevent runoff from entering preserved native vegetation and will be clearly designated on the construction plans. c. A water truck or water buffalo with adequate hoses for fire control will be maintained on the site during all habitat clearing and construction activities. Coastal sage scrub within the likely dust drift radius of construction areas will	Yes	N/A	N/A	N/A	SCE will comply with this measure, which is also consistent with requirements in the SAA and the SWPPP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the approved biologist(s). d. Smoking will be allowed only in designated areas equipped with sand boxes for disposal of cigarette butts. e. Trash will be stored properly (inaccessible to scavengers including crows and raccoons) or removed from the construction site on a daily basis.					
CM 12	Vegetation removal will be conducted between September 1 and February 14, outside the gnatcatcher breeding and nesting season, except with prior approval by the Service. Clearing of vegetation (excluding "Foot Access Only" impact areas) will take place in the presence of the approved biologist(s). Prior to and during the initial clearing and grubbing of vegetation within the Main Project Area, the approved biologist(s) will locate individual gnatcatchers on site and passively flush birds toward areas of appropriate vegetation that will be avoided. The approved biologist(s) will record the number and locations of gnatcatchers displaced by vegetation removal and report this information to the Service within 24 hours. The approved biologist will report any impacts to vegetation beyond the anticipated project footprint, as defined in Figure 3a-c immediately to the Service.	Yes	Yes	Yes	N/A	A qualified SCE-approved biologist will monitor vegetation removal within coastal California gnatcatcher habitat. A clearance sweep will first confirm that no active nests or individuals are present in the area to be cleared.
CM 13	After vegetation is removed, a designated construction monitor will conduct weekly inspections of the project site during construction that occurs between September 1 and February 14, outside the gnatcatcher breeding and nesting season. The designated construction monitor will have the authority to halt construction activities that do not adhere to the construction-related CMs (i.e., CM 9 through CM 14) and will report any impacts to gnatcatcher or its habitat not in compliance with the project, as detailed in this biological opinion, immediately to the Service.	Yes	Yes	Yes	N/A	A qualified SCE-approved biologist will conduct weekly inspections of the Project site during construction outside of the breeding and nesting season.
CM 14	After vegetation is removed, an approved biologist(s) will be present to monitor construction activities that occur within 500 feet of remaining vegetated areas, during the breeding and nesting season (Figures 3a-c). The approved biologist(s) will perform a minimum of three pre-construction surveys, on separate days, to determine the presence of gnatcatcher nest building activities, egg incubation activities, or brood rearing activities within 500 feet of construction. The surveys will begin a maximum of 7 days prior to project construction, and one survey will be conducted the day immediately prior to the initiation of work. Thereafter, weekly surveys will be conducted during the breeding season. SCE will notify the Service at least 7 days prior to the initiation of the breeding season surveys. The approved biologist(s) will record the number and map the location of gnatcatchers observed during the initial breeding season surveys and report these numbers and locations to the Service within 24 hours. If an active nest is observed, an appropriate buffer (minimum of 300 feet for any active gnatcatcher nest) will be established by the approved biologist(s) wherein no project activities will occur until the nest is no longer active.	Yes	Yes	Yes	N/A	A qualified SCE-approved biologist will monitor vegetation removal within 500 feet of coastal California gnatcatcher habitat after initial vegetation removal and during the nesting and breeding season in accordance with this measure.
CM 15	The approved biologist(s) will provide monthly summary reports (including photos) of project activities completed during vegetation clearing and during construction activities that occur during the breeding and nesting season. Within 60 days of completion of construction, the approved biologist(s) will submit a final report that includes: a) as-built construction drawings with an overlay of habitat that was impacted and avoided; b) photographs of habitat areas that were to be avoided; and c) a summary documenting that authorized	Yes	N/A	N/A	N/A	A qualified SCE-approved biologist will provide reports and photographs of Project activities in accordance with this measure, drawn from the daily and weekly FRED reporting database.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	impacts were not exceeded and that compliance with the conditions of this biological opinion was achieved.					
CM 16	With the exception of routine patrols and visual inspections of facilities and hand- weeding/treatment of nonnative plants, routine maintenance will be scheduled outside the gnatcatcher breeding and nesting season. Hand-weeding/treatment of nonnative plants that require entry into gnatcatcher habitat during the breeding season will be conducted in the presence of an approved biologist (defined in CM 8). The approved biologist will conduct surveys for individual nests prior to initiation of maintenance activities to ensure no active nests are disturbed.	Yes	N/A	N/A	N/A	Routine maintenance will be scheduled outside of ht gnatcatcher breeding and nesting season in accordance with this measure, or if maintenance must occur during the breeding and nesting season, hand weeding/treatment of nonnative plants will occur in the presence of an approved monitor.
CM 17	Telecommunications Routes 1 and 3 will be constructed in the fall or winter (i.e., between September 1 and February 14), outside the gnatcatcher breeding and nesting season, except with prior approval by the Service.	Yes	N/A	N/A	N/A	SCE intended to conduct activities within Telecommunications Routes 1 and 3 outside of the gnatcatcher breeding and nesting season.
CM 18	SCE will implement construction-related conservation measures CM 8 through CM 15.	Yes	N/A	N/A	N/A	None.
CM 19	SCE will implement a noxious and invasive weed control plan before, during, and after construction, including during the project restoration phase, as described in the FEIR, MM BR-4.	Yes	N/A	N/A	N/A	As specified in the Noxious and Invasive Weed Control Plan (NIWCP), SCE and its contractor(s) will comply with this measure during construction.
CM 20	Temporary impacts to vegetation communities within the Main Project Area, outside the regulatory scope of analysis, will be restored in accordance with the revised HRMP. In addition to the items specified in CM 2, the HRMP will identify the anticipated timing of restoration relative to the initiation of temporary or permanent impacts. The revised HRMP will be submitted by SCE for approval by the Service within 90 days of issuance of the biological opinion.	Yes	N/A	N/A	N/A	The HRMP has been developed in coordination with the appropriate agencies and will be implemented during all applicable phases of construction. It will include a discussion of the timing of the restoration, and be submitted within 90 days of BO issuance for the project.
CM 21	Routine maintenance of the proposed facilities will be conducted consistent with CM 16.	Yes	N/A	N/A	N/A	SCE will compy with this measure during routine maintenance activities.
CM 22	A Service-approved biological monitor (For CMs applicable to the least Bell's vireo, the biological monitor(s) will be a trained ornithologist with at least 40 hours of supervised experience locating least Bell's vireo and mapping their locations in the field) will be retained by SCE to conduct activities as specified in the measures that follow. At least 7 days prior to initiating project activities, SCE will submit to the Service, in writing, the name(s), any recovery permit numbers, and resumes of all proposed biological monitors. Proposed activities will not begin until a biological monitor has been approved by the Service. The approved biological monitor will be provided a copy of this biological opinion and will have the authority to halt construction activities that do not comply with the conservation measures below.	Yes	Yes	N/A	N/A	SCE has submitted the name(s), any recovery permit numbers, and resumes of all proposed biologists to the USFWS for approval. Approval of the biologists is anticipated by September 26, 2017.
CM 23	The biological monitor will conduct orientation meetings for construction personnel to review a description of least Bell's vireo habitat, the location of Nevin's barberry (as applicable), construction limits, and the measures that will be implemented to minimize the potential for impacts to federally listed species during construction (CM 24 through CM 30).	Yes	N/A	N/A	N/A	A description of least Bell's vireo habitat, the location of Nevin's barberry, construction limits, and the measures that will be implemented to minimize the potential for impacts to federally listed species during construction is included in the WEAP. In addition, a specific orientation to the Nevin's barberry will be provided whenever crews are working in close proximity to the individual within Whittier Narrows.
CM 24	All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated disturbed/developed areas. These designated areas will not be located within waterways or riparian areas,	Yes	N/A	N/A	N/A	SCE will comply with this measure, which is also consistent with requirements in the SAA and the SWPPP.

Mitigation Measure	Description	Mitigation Measure Applicable	Suitable Habitat Present?	Species Observed On Site?	Previous Studies	Comments
	but will be located in such a manner as to prevent runoff from entering existing native vegetation areas and will be clearly delineated on construction plans.					
CM 25	Riparian vegetation will be removed between September 16 and March 14, outside the vireo breeding and nesting season.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction of the Project.
CM 26	Telecommunications Route 3 activities will be conducted between September 16 and March 14, outside the vireo breeding and nesting season, except with prior approval by the Service. To the extent practicable, construction of remaining project components that are located within 500 feet of riparian vegetation will also be conducted outside the vireo breeding and nesting season. If construction must be completed during this period, weekly surveys for vireo will be conducted prior to and during construction activities. If any vireos are found, the Service will be contacted, and measures will be taken to reduce construction sound levels to less than 60 decibels in areas used by vireo. Weekly survey reports will be prepared during the nesting season and sent electronically to the Service each week that surveys are conducted. The weekly survey reports will identify nest sites and territories within 500 feet of the proposed project and will include a brief summary (including photographs) of the project activities completed.	Yes	N/A	N/A	N/A	SCE will comply with this measure and monitoring will occur in accordance with these requirements.
CM 27	If construction occurs between September 16 and March 14, outside the vireo breeding and nesting season, a designated construction monitor will conduct weekly inspections of the project site and will have the authority to halt/suspend all activities that do not adhere to the construction-related measures (CM 22 through CM 31, as applicable). The construction monitor will report impacts to vegetation beyond the outer limits of disturbance, as defined in the Figures 3a-c, to the Service immediately and will provide a brief summary (including photographs) of activities completed on a monthly basis to the Service.	Yes	Yes	N/A	N/A	SCE will comply with this measure and monitoring / reporting will occur in accordance with these requirements.
CM 28	Southern California Edison will delineate Nevin's barberry with flags or markers that are clearly visible to personnel on foot and in heavy equipment. Project activities conducted within 200 feet of Nevin's barberry will be monitored by a biological monitor who will halt work if it is determined that Nevin's barberry could be impacted.	Yes	Yes	N/A	N/A	SCE will comply with this measure during construction of the Project.
CM 29	Surfaces disturbed during construction, including access roads, will be effectively stabilized (e.g., with water) to control dust emissions, and vehicle speeds on unpaved roadways will be limited to 15 miles per hour to limit.	Yes	N/A	N/A	N/A	SCE will comply with this measure during construction of the Project.
CM 30	To minimize the potential for unanticipated impacts to Nevin's barberry, preconstruction surveys will be conducted in suitable habitat within construction areas, access roads, and staging areas. If additional plants are located, a 200-foot no-work buffer will established and the Service will be contacted to assist in determining if additional measures are necessary to avoid adverse effects to Nevin's Barberry.	Yes	Yes	N/A	N/A	SCE will comply with this measure during construction of the Project.
CM 31	Temporarily disturbed areas will be restored following completion of construction, in accordance with the final Service-approved HRMP.	Yes	N/A	N/A	N/A	The HRMP, which discusses restoration of temporarily - disturbed areas of the Project, has been developed in coordination with the appropriate agencies and will be implemented during all applicable phases of construction.

Chapter 1
Introduction

A biological review for the first Notice to Proceed Request (NTPR-1) was conducted for Southern California Edison's (SCE) Mesa Substation Project (Project Component). The Project Component includes the removal, relocation, modification, and/or construction of various transmission, subtransmission, distribution, and telecommunication facilities, including the relocation of an existing 72-inch Metropolitan Water District (MWD) pipeline that traverses the substation property, within and adjacent to Mesa Substation. The Project Component is located in the Cities of Bell Gardens, Commerce, Montebello and Monterey Park, in Los Angeles County, California (Figure 1).

On March 13, 2015, Southern California Edison (SCE) filed an application (A.15-4 03-003) and Proponent's Environmental Assessment (PEA) with the California Public Utilities Commission (CPUC) for a Permit to Construct (PTC) the Mesa 500-kilovolt (kV) Substation Project (Project). CPUC issued a Draft Environmental Impact Report (DEIR) in April 2016 and a Final Environmental Impact Report (FEIR) in October 2016, which describe the Project.

All Applicant Proposed Measures (APMs), Mitigation Measures (MMs), and permits have been identified and will be implemented or completed prior to commencement of the construction associated with NTPR-1. Monitoring and reporting on implementation of APMs and MMs will be conducted in accordance with the *Mesa 500-kV Substation Project Mitigation Monitoring and Reporting Plan*.

The biological review was conducted to demonstrate that Southern California Edison (SCE) has met the preconstruction mitigation measure (MM) requirements for construction of Mesa 500-kV Substation outlined in the *Mesa Substation Final Environmental Impact Report* (FEIR) (Ecology and Environment 2016). Additionally, required pre-construction surveys for biological resources will be conducted prior to start of construction, as applicable.

Chapter 2
Project Component Description

The Project Component will be located both within an 86.2-acre site in the city of Monterey Park as well as various locations in the cities of Bell Gardens, Commerce, and Montebello. The Project Component includes the following.

1. Initial site grading, vegetation removal, storm drain installation, and construction of the Mechanical Electrical Equipment Room (MEER) basement for the new Mesa Substation.
2. Modifications to certain existing Mesa Substation equipment.
3. Re-routing of an existing MWD waterline through the substation property.
4. Removal, relocation, modification, and/or construction of various transmission, subtransmission, distribution, and telecommunication structures.
5. Installation of new streetlights

The proposed substation and associated routes span approximately 3.7 miles along the SCE right-of-way (ROW) in the city of Monterey Park. For reference, Mesa Substation is located within the Monterey Park, United States Geological Survey (USGS) 7.5' topographic quadrangle.

SCE has characterized NTPR-1 as covering a variety of initial construction activities within the substation site and adjacent areas, including relocating of a portion of an existing 72-inch-diameter MWD pipeline that traverses the Mesa Substation site and replacing it with an 84-inch-diameter pipeline. All work referenced in NTPR-1 is necessary to enable the next phases of construction to proceed once the new pipeline alignment has been established. Work associated with NTPR-1 is expected to take approximately 6 months.

Table 2-1 is a summarized list of elements and activities covered by NTPR-1.

Table 2-1. Project Elements and Associated Construction Activities

Project Elements	Construction Activities
Grading and storm drain installation at Mesa Substation site	• Vegetation removal, including grubbing and scraping • Mass grading for site preparation • Installation and maintenance of best management practices (BMPs) • Operation of construction equipment and vehicles • Soil import • Installation of new storm drain lines, including manholes, open trench excavation, and grading
Construction of the MEER	• Installation of fence, including temporary construction fencing and permanent right-of-way (ROW) fencing • Construction of an 11-foot-tall underground reinforced concrete basement and erection of an above ground pre-engineered metal Mechanical Electrical Equipment Room

MWD waterline relocation	• Installation of fencing, including temporary construction fencing and permanent ROW fencing • Construction of waterline, including site demolition activities, grading, installation of manholes and structures, engineered shoring, jack and bore operations under Potrero Grande, and open trench excavation.
Modification of existing Mesa Substation, including: removal of capacitors, installing new conduit paths, and rebuilding position in the existing 220-kV switch rack	• Soil/concrete/steel/equipment disposal • Installation of fencing, including temporary construction fencing and permanent ROW fencing • Installation of vaults, duct banks, foundations, tower structures, rack structures, underground cables, and overhead wires • Grading for site preparation • Installation and maintenance of BMPs • Operation of construction equipment and vehicles • Replacement of existing utility facilities
Transmission, subtransmission, distribution, and telecommunications line relocations	• Vegetation removal, including grubbing and scraping • Concrete/steel/wood pole/conductor/hardware disposal • Grading for site preparation • Installation of vaults, duct banks, foundations, tower or pole structures, underground cables, and overhead wires • Installation and maintenance of BMPs • Operation of construction equipment and vehicles • Temporary traffic control • Replace two existing street light poles and associated overhead conductors with new concrete street lights

Additional detailed information on the work associated with the NTPR-1 Project Component is provided in the *Documentation for Compliance with the Opinion Granting a Permit to Construct (PTC) Notice to Proceed Request – 1 for Initial Project-Related Activities for the Mesa 500-Kv Substation Project*, to which this biological review is appended.

Chapter 3
Methods

3.1 Literature Review

Reports that describe previous general and focused biological surveys that were completed specifically for the Project Component were reviewed. These included the following.

- *Final Environmental Impact Report, Southern California Edison's Application for the Mesa 500-kV Substation Project* (Ecology and Environment 2016).
- *Biological Resources Technical Report for the Mesa 500 kV Substation Project* (Insignia 2015a).
- *Biological Assessment, Mesa 500 kilovolt Substation Project, Los Angeles, California* (Insignia 2015c).

The above reports describe and assess the general and focused biological surveys that were completed in conjunction with Segments 6, 7, 8, and/or 11 of the Tehachapi Renewable Transmission Project (TRTP) and were reviewed because portions of the TRTP overlap with the Project Component. Focused survey reports reviewed include those for burrowing owl (*Athene cunicularia*), bats, coastal California gnatcatcher, special-status plants, and regulated trees. In addition, applicable general pre-construction survey reports for the TRTP were reviewed. The SCE Field Reporting Environmental Database (FRED) was reviewed for construction monitoring results for areas of the TRTP that overlapped with the Project Component.

Table 3-1 summarizes all of the applicable general, focused and pre-construction survey reports reviewed. Surveys conducted in 2017, for which reports have not been completed at the time this document was prepared, are summarized in Section 3.2 Field Review, below.

Table 3-1. Applicable General, Focused, and Pre-Construction Surveys

Survey Type	Reference
Bats	
Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project	Aspen 2009
Burrowing Owl	
2009 Focused Survey Report for Burrowing Owl, Segments 6 and 11	AMEC 2009c
2009 Focused Survey Report for Burrowing Owl, Segments 7 and 8	AMEC 2009b
2010 Focused Survey Report for Burrowing Owl, Segments 6 and 11	ICF 2010d
2010 Focused Survey Report for Burrowing Owl, Segments 7 and 8	ICF 2010e
Coastal California Gnatcatcher	
2010 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8	ICF 2010f
2011 Focused Survey Report for Coastal California Gnatcatcher Segments 7 and 8	ICF 2011a

Survey Type	Reference
45-day Report for Protocol Coastal California Gnatcatcher Surveys for the Proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California.	RBC 2015
Special-Status Plants	
Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project	Aspen 2009
2009 Final Special-Status Plant Species Survey Report for the Southern California Edison Tehachapi Renewables Transmission Project Segments 7 and 8	AMEC 2009a
2010 Focused Survey Report for Special-Status Plants Segments 7 and 8	ICF 2010c
Regulated Trees	
Tree Inventory Report for Segments 7 and 8	ICF 2011d
Jurisdictional Resources	
Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 6 and 11.	ICF 2010a
Jurisdictional Delineation Report for the Tehachapi Renewable Transmission Project: Segments 7 and 8.	ICF 2010b
Supplemental Jurisdictional Delineation Report for the Mesa 500-kV Substation Project	Insignia 2015b
Pre-Construction	
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	ICF 2011c

A list of special-status species known to occur in the vicinity of the Project Component was compiled using the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2017), California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2017), and the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPaC) (USFWS 2017a). Special-status species known to occur in the project vicinity are described in Table 4-1 and include federally listed threatened and endangered species, state-listed threatened and endangered species, state species of special concern, California fully protected species, species identified as candidates for state or federal listing, and plants identified as special-status by CNPS indicated as California Rare Plant Rank (CRPR) in Table 4-1 (Chapter 4, *Results*). Finally, the locations of federally proposed and designated Critical Habitat were checked in relation to the Project Component (USFWS 2017b).

To achieve a complete and accurate report of known occurrences in the vicinity, the literature and database search was conducted for all USGS 7.5-minute quadrangles surrounding or spanned by the Project Component, which include Azusa, Baldwin Park, El Monte, La Habra, Los Angeles, Mt. Wilson, Pasadena, South Gate, and Whittier. Records were compiled and reviewed for all known special-status plants and wildlife within the 5 mile Project Component vicinity.

3.2 Field Review

Focused surveys within the Project Component were conducted as part of the TRTP in 2007, 2009, 2010, and 2011. Focused surveys were conducted specifically for the Project Component in 2014, 2015, and 2017. Information pertaining to survey conditions, detailed methodology, time, weather conditions, and participating staff is provided in the applicable final reports.

3.2.1 Focused Surveys

Special-Status Wildlife Species

Western Spadefoot

In accordance with MM BR-1 and SAA AMM 2.9, an ICF biologist conducted a habitat assessment for western spadefoot (*Spea hammondii*) within the Project Component in May 2017. Prior to completing the field work, the biologist reviewed historic records, including the CNDDB (CDFW 2017), and historic aerial photo imagery in Google Earth to understand the potential for western spadefoot habitat to be present within the Project Component.

Habitat suitability was rated for two categories: upland adult habitat, and temporary ponded breeding habitat. For sites to possess suitable spadefoot habitat, they must contain suitable habitat elements from both categories. Upland adult habitat consists of intact natural landforms with some native vegetative cover. For the purposes of this habitat assessment, native vegetative cover greater than 25 percent was considered to be sufficient to provide potential habitat. During the habitat assessment field survey, the biologist walked all areas of the Project Component on foot looking for depressional basins and upland adult habitat that could potentially support this species.

Burrowing Owl

In 2009 and 2010, focused surveys for burrowing owl were conducted for Segments 6, 7, 8, and 11 of the TRTP in accordance with the established protocol for this species (CDFG 1995). 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 global positioning system (GPS) unit. During the focused surveys, potential burrows were checked for any sign of recent owl occupation (e.g., whitewash, pellets/castings, feathers). Binoculars were used to search for and identify species on site (AMEC 2009b, 2009b; ICF 2010d, 2010e).

Coastal California Gnatcatcher

In 2010 and 2011, focused coastal California gnatcatcher 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 (ICF 2010f, 2011a). In 2014, Rocks Biological Consulting (RBC) biologists conducted a habitat assessment to identify suitable coastal California gnatcatcher habitat within the Project Component. Protocol-level coastal California gnatcatcher surveys were conducted by RBC on April 9 through May 15, 2015 (RBC 2015). Surveys were conducted in potential coastal California gnatcatcher habitat identified by RBC during the 2014 habitat assessment.

Protocol level surveys were also conducted in 2017 by ICF within the Project Component in accordance with requirement in MM-BR-12. Additional pre-construction sweeps for coastal California gnatcatcher will be conducted in appropriate habitats of the Project Component immediately prior to construction in accordance with APM BIO-4 and MM BR-1.

Raptors and Nesting Birds

The Project Component provides potential nesting habitat for passerine and raptor bird species that are protected under the Migratory Bird Treaty Act and California Fish and Game Code. In 2010, 2011, 2012, and 2013 nesting bird surveys were conducted regularly during the nesting bird season to document nesting birds within the TRTP. Survey methodology for future nesting bird seasons will follow the methodology in the Project's Nesting Bird Management Plan. If breeding birds with active nests are found, a biological monitor will establish a suitable buffer per MM BR-11 and the Project's Nesting Bird Management Plan around the nest for ground and helicopter-based construction activities.

Bats

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, some of which included portions of the Project Component. Habitats capable of supporting roosts were evaluated in the field by searching for structures such as cavities, crevices, and cracks in trees, fractured rocks (including caves and mines), cliffs, and human structures (e.g., buildings, bridges, and dams) (Aspen 2009).

Special-Status Plants and Regulated Trees

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 from February to July 2008 (Aspen 2009). 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).

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* (CDFG 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 (AMEC 2009a). 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 (ICF 2010c). 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* (CDFG 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.

Surveys for special-status plants were conducted in June 2015 during the bloom period for rare annuals and followed the standardized guidelines issued by CDFW (2009) and CNPS (2001). Seven special-status plant species had been identified to have a potential to occur within the Project Component, including Nevin's barberry (*Berberis nevinii*), Coulter's matilija poppy (*Romney coulteri),* many-stemmed dudleya (*Dudleya multicaulis),* Plummer's mariposa-lily (*Calochortus plummerae*), intermediate mariposa-lily (*C. weedii* var. *intermedius*), southern tarplant (*Centromadia parryi* ssp. *australis*), and southern California black walnut (*Juglans californica*). These seven species were targeted during the 2015 special-status plant surveys (Insignia 2015a). Noreas also conducted preconstruction focused surveys for special-status plants in May 2017 in accordance with requirements in APM BIO-1 and MM BR-1.

Tree inventory surveys were conducted in 2011 within Segment 7 and 8 of the TRTP (ICF 2011d). Tree inventories followed standard professional practices of the International Society of Arboriculture and mapped the trees regulated within the TRTP. Regulated trees within the Project Component are regulated by the County of Los Angeles. Chapter 22.56, Oak Tree Permit (Ordinance 88-0157 § 1), of the County of Los Angeles Municipal Code 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. The Southern California black walnut is not a regulated tree under this County ordinance (County of Los Angeles 2014).

3.2.2 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* (Aspen 2009). Vegetation communities were added or revised by Insignia following surveys. The majority of the plant communities were characterized according to *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The remaining plant communities were characterized by TRTP or by Insignia as part of the Biological Technical Report (BTR) for the Project Component (Insignia 2015a).

3.2.3 Hydrological Features

Jurisdictional Delineation

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 (ICF 2010a, 2010b, 2011a). All

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, areas of TRTP overlapping the Project Component were 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 conducted a survey of the Project Component. 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 Project Component 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 in the Project Component area. On December 15 through 18, 2014, Insignia biologists conducted a wetland delineation of the transmission, subtransmission, distribution, and telecommunications line work sites (Insignia 2015b). The Insignia delineations were conducted using the same methodology as the ICF delineations.

Chapter 4
Results

4.1 Potential Biological Resources

In conjunction with the preparation of the FEIR (Ecology and Environment 2016), habitat assessments were conducted for all biological resources, including special-status species. During these assessments, all special-status species and their potential to occur in the Project Component were evaluated. A detailed evaluation of these species can be found in Tables 4.3-2 (plants) and 4.3-3 (wildlife) of the FEIR (Ecology and Environment 2016). The background literature review, including the CNDDB (CDFW 2017) and IPaC (USFWS 2017a), identified the special-status biological resources historically known and having the potential to occur within a 5-mile radius of the Project Component. Special-status species identified through the literature review were considered to have potential to occur in the Project Component if the known geographic range included any part of the surrounding 5-mile Project Component vicinity and if the general habitat requirements or environmental conditions required for the species were also present. These species and their respective status are listed in Table 4-1.

Since publication of the FEIR, additional surveys have been completed, including special-status plant surveys conducted during 2017, a habitat assessment for western spadefoot, and a habitat assessment for southern grasshopper mouse. Section 4.2 Summary of Survey Results summarizes all survey results to date, including those completed since publication of the FEIR. Not all species listed in Table 4-1 are still considered to have a potential for occurrence within the Project Component, as described in the following sections.

Table 4-1. Special-Status Biological Resources Analyzed for Occurrence in the Vicinity of the Project Component

Resource Common Name/Scientific Name	Status[1]			Habitat and Distribution	Activity/ Bloom Period
	Fed	State	CRPR		
Wildlife					
Amphibians					
Western spadefoot *Spea hammondii*	N/A	CSC	N/A	Western spadefoot prefers areas of open vegetation and short grasses with sandy or gravelly soils. It frequents washes, floodplains of rivers, and alkali flats, but can range into foothills and mountains. Through most of the year, western spadefoot resides in underground burrows. It breeds in shallow, temporary pools formed by heavy winter rains.	October to May (dependent on rainfall)
Reptiles					
Belding's orange-throated whiptail *Aspidoscelis hyperythra beldingi*	N/A	CSC	N/A	Found in a variety of ecosystems, primarily hot and dry open areas with sparse foliage, coastal sage scrub, chaparral, woodland, and riparian areas at elevations from 0 to 610 m (2,000 ft) AMSL.	Year-round
California glossy snake *Arizona elegans occidentalis*	N/A	CSC	N/A	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Burrows underground during the day.	Year-round
Coastal whiptail *Aspidoscelis tigris stejnegeri*	N/A	CSC	N/A	Found in a variety of ecosystems including chaparral, woodland, and riparian areas, but primarily in hot and dry open areas with sparse foliage at elevations from 0 to 2,130 m (7,000 ft) AMSL.	Year-round
Southwestern pond turtle *Actinemys marmorata pallida*	N/A	CSC	N/A	Inhabits permanent or nearly permanent waters, including ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. Require basking sites (i.e., submerged logs, rocks, mats of floating vegetation, or open mud banks) at elevations from 0 to 1,430 m (4,690 ft) AMSL.	February to November/ Year-round
Birds					
Bank swallow (*Riparia riparia*)	N/A	ST	N/A	Predominantly a colonial breeder. Requires fine-textured or sandy banks or cliffs to dig horizontal nesting	Breeding (early March to August); Fall

Resource Common Name/Scientific Name	Status[1]			Habitat and Distribution	Activity/ Bloom Period
	Fed	State	CRPR		
				tunnel and burrow. Nest almost always near water. Feeds primarily over grassland, shrubland, savannah, and open riparian areas during breeding season and over grassland, brushland, wetlands, and cropland during migration.	migrants through mid-September.
Coastal California gnatcatcher *Polioptila californica californica*	FT	CSC	N/A	Prefers open scrubby habitats such as coastal sage scrub and some forms of chaparral at elevations from 0 to 500 m (1,640 ft) AMSL.	Year-round
Least Bell's vireo *Vireo bellii pusillus*	FE	SE	N/A	Found in dense riparian scrub including willows and mulefat at elevations from 0 to 1,240 m (4,100 ft) AMSL.	Breeding (February to August)
Loggerhead shrike *Lanius ludovicianus*	N/A	CSC	N/A	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 power lines 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 (e.g., sharp, thorny plants or barbed wire fences) are important for this species to manipulate and store prey. Breeding in Southern California typically occurs from as early as January to July.	Year-round
Peregrine falcon *Falco peregrinus anatum*	D	D/FP	N/A	Nests on cliff ledges, and forages where there are large concentrations of birds.	Nesting (October to February)
Swainson's hawk *Buteo swainsoni*	N/A	ST	N/A	Forages and nests in Great Basin grassland, riparian forest, riparian woodland, and valley and foothill grassland.	Breeding (March to September)
Western burrowing owl *Athene cunicularia*	N/A	CSC	N/A	Inhabits prairies, grasslands, lowland scrub, agricultural lands, and dry open rolling hills at elevations from below sea level to over 3,657 m (12,000 ft) AMSL. They require large open expanses of sparsely vegetated areas on gently rolling or level terrain with an abundance of active small mammal	Year-round (Burrow sites and some wintering sites)

Resource Common Name/Scientific Name	Status[1]			Habitat and Distribution	Activity/ Bloom Period
	Fed	State	CRPR		
				burrows. They use rodent or other burrows for roosting and nesting cover and are also known to use pipes, culverts, and nest boxes where burrows are scarce.	
White-tailed kite *Elanus leucurus*	N/A	FP	N/A	Inhabits woodlands, open savanna, grasslands, partially cleared lands, and agricultural fields at elevations from 0 to 1,280 m (4,200 ft) AMSL.	Year-round
Yellow warbler *Dendroica petechia brewsteri*	N/A	CSC	N/A	Breeds in riparian woodlands and shrubby thickets, typically along riparian or wetland systems and occur at elevations from 0 to 2,743 m (9,000 ft) AMSL.	Year-round
Mammals					
Southern grasshopper mouse *Onychomys torridus ramona*	N/A	CSC	N/A	Inhabits desert and grassland areas, especially in scrub habitats with friable soils for digging. The preferred habitat consists of alkali desert scrub and desert scrub habitat, but can also be found in succulent scrub, wash, riparian, coastal scrub, mixed chaparral, sagebrush, and bitterbrush habitats. Peak breeding season is from May to July, but may start breeding as early as January under ideal conditions.	Year-round
Plants					
Coulter's matilija poppy *Romney coulteri*	N/A	N/A	4.2	Perennial rhizomatous herb found in chaparral and coastal sage scrub, often in burn areas at elevations from 20 to 1200 m (67 to 3,937 ft) AMSL.	March to July
Intermediate mariposa-lily *Calochortus weedii* var. *intermedius*	N/A	N/A	1B.2	Perennial bulbiferous herb found in chaparral, coastal scrub, and valley and foothill grassland within rocky or calcareous substrate at elevations from 105 to 855 m (250 to 2,800 ft) AMSL.	May to July
Many-stemmed dudleya *Dudleya multicaulis*	N/A	N/A	1B.2	Perennial herb found in chaparral, valley grassland, and coastal sage scrub at elevations from 20 to 1,000 m (65 to 3,280 ft) AMSL.	April to July
Nevin's barberry *Berberis nevinii*	FE	CE	1B.1	Perennial evergreen shrub found in chaparral, cismontane woodland, coastal scrub, and riparian habitats at	March to July

Resource Common Name/Scientific Name	Status[1]			Habitat and Distribution	Activity/ Bloom Period
	Fed	State	CRPR		
				elevations from 70 to 825 m (330 to 2,707 ft) AMSL.	
Plummer's mariposa-lily *Calochortus plummerae*	N/A	N/A	4.2	Perennial bulbiferous herb found in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland within granitic or rocky substrate at elevations from 100 to 1700 m (328 to 5,577 ft) AMSL.	May to July
Southern California black walnut *Juglans californica*	N/A	N/A	4.2	Perennial deciduous tree found in alluvial soils within chaparral, cismontane woodland, and coastal scrub communities at elevations from 50 to 900 m (164 to 2,953 ft) AMSL.	March to August

Resource Common Name/Scientific Name	Status[1]			Habitat and Distribution	Activity/ Bloom Period
	Fed	State	CRPR		
Southern tarplant *Centromadia parryi* ssp. *australis*	N/A	N/A	1B.1	Annual herb found in the margins of marshes and swamps, vernally mesic valley and foothill grassland, and vernal pool habitat at elevations from 0 to 480 m (0 to 1,575 ft) AMSL.	May to November

[1]Status:
FEDERAL (U.S. Fish and Wildlife Service)
D= Delisted
FE = listed as endangered under the federal Endangered Species Act.
FT = listed as threatened under the federal Endangered Species Act.
STATE (California Department of Fish and Wildlife)
SR = listed as rare by the State of California
ST = listed as threatened under California Endangered Species Act.
CSC = California species of special concern
FP = Fully protected under the California Fish and Game Code
CRPR (California Rare Plant Rank)
List 1A = Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
List 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2A = Plants Presumed Extirpated in California, But More Common Elsewhere
List 2B = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
List 3 = Plants for which more information is needed – Review list
List 4 = Plants of limited distribution – Watch list
List .1 = Seriously threatened in California
List .2 = Moderately threatened in California
List .3 = Not very threatened in California
N/A: Not applicable

4.2 Summary of Survey Results

Vegetation mapping, a jurisdictional delineation and focused surveys for special-status wildlife and special-status plants have been conducted for the Project Component. The following sections summarize the results of the previous focused surveys that are relevant to the Project Component area.

4.2.1 Special-Status Wildlife

Previous habitat assessments, focused surveys, and pre-construction surveys performed for both the TRTP and the Project Component were reviewed to determine the presence of any special-status wildlife species that may occur within the Project Component. The results of the literature review and the previous focused surveys indicate that the Project Component provides potential habitat for the following special-status wildlife species: burrowing owl, nesting birds (including raptors), and coastal California gnatcatcher. The results of these surveys are summarized below. Details regarding the species observations are provided in Table 4-2 and shown on Figure 2.

Special-Status Reptiles and Amphibians

Habitat for southwestern pond turtle is not present within the Project Component and no impacts are expected to this species. Southwestern pond turtle requires permanent water sources, and there are no permanent water sources within the Project Component.

Habitat for the western spadefoot, as defined in Section 3.2.1, was not noted during the May 2017 habitat assessment. The Project Component is heavily disturbed, exhibits historic grading of natural landforms. Temporary ponded breeding habitat features were observed in two locations within the Project Component, but not in conjunction with upland adult habitat. In these circumstances, the observed habitat features did not make appropriate habitat for western spadefoot in spite of having some appropriate habitat elements. As a result, the requirement for additional pre-construction surveys for this species within the Project Component would not apply.

Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), California glossy snake (*Arizona elegans occidentalis*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*) have a moderate to high potential to occur within the Project Component. No additional observations of these species or other special-status reptile or amphibian species have been observed within the Project Component since preparation of the FEIR. Potential impacts on these species would be avoided or minimized through APM-BIO-3, which requires biological monitoring during construction, MM-BR-1, which requires pre-construction sweeps for special-status species immediately prior to construction activities, MM-BR-2, which requires the limits of construction to be staked, thus avoiding inadvertent impacts on these species, and MM-BR-5, which requires a Worker Environmental Awareness Program (WEAP) to be provided to all construction personnel.

Special-Status Birds

Burrowing Owl

No burrowing owl (*Athene cunicularia*) individuals were documented within the Project Component during TRTP surveys (AMEC 2009b, 2009c; Aspen 2009; ICF 2010d, 2010e). Although potentially suitable habitat exists for this species within open, sparsely vegetated areas of the Project Component, it has never been observed during any survey conducted for TRTP or the Project Component to date.

Coastal California Gnatcatcher

Coastal California gnatcatchers were observed foraging and nesting within the Mesa Substation during the TRTP 2010 and 2011 focused coastal California gnatcatcher surveys conducted for TRTP (ICF 2010f, 2011a). Coastal California gnatcatchers were also observed foraging and nesting within non-native vegetation at the Mesa Substation during nesting bird surveys for TRTP (SCE 2017). During the protocol surveys in 2015, two nesting pairs and their nests were observed adjacent to the Mesa Substation (Figure 2, Sheet 2). In 2017, protocol surveys for this species were also conducted within the Project Component. Four coastal California gnatcatcher nests were detected, including two nests within mulefat scrub, and two nests in disturbed coastal sage scrub habitat. Based on observed behavior and timing, it is assumed that there are two breeding pair of coastal

California gnatcatcher associated with these nests, and each pair is assumed to have nested twice during the 2017 season.

Least Bell's Vireo

One least Bell's vireo was also observed foraging within a small, isolated man-induced wetland area along the 500-kV transmission corridor adjacent to the Mesa Substation site, directly south of Resurrection Cemetery. This observation was made during construction monitoring on TRTP in April 2013 and has been determined to be a migrating individual. The man-induced wetland area developed from a leaking underground irrigation pipe, which was recently repaired by the owner of the landscaping business adjacent to the Mesa Substation site. This area is no longer considered habitat for the least Bell's vireo because it is no longer being fed by irrigation. The ephemeral drainages within the Mesa Substation site support sparse mulefat scrub but are dominated primarily by non-native and ornamental plant species. The plant communities associated with the ephemeral drainages south of the Mesa Substation site are either non-native, non-habitat, or characterized by riparian scrub that is too small, patchy, and/or marginal (i.e., it lacks the multi-layered canopy typically required) for least Bell's vireo. As a result, it has been determined that the Project Component would have no effect on least Bell's vireo, and this species is not discussed further..

Bank Swallow

No bank swallows have been observed during any previous surveys for the Project Component or for TRTP. No suitable breeding habitat is present within the Project Component. Suitable foraging habitat may be present for this species, but would be in highly disturbed riparian woodland areas within the Mesa Substation site.

Other Special-Status Avian Species

Additional special-status avian species were noted incidentally during construction monitoring for TRTP. These species are listed in Table 4-2. Special-Status Avian Species Observations within the Project Component. None of these occurrences were associated with nest sites.

Table 4-2. Special-Status Avian Species Observations within the Project Component

Species	Observation Details	Figure 2 Sheet Number
Cooper's hawk (*Accipiter cooperi*)	TRTP FRED ID# 007520, 006693, 006623, 003788, 003748, 003698, 003563, 003472, 003454, 003435, 003312, 003265, 014362, 011210, 011075, 010933, 010881	Sheet 1 and 2
least Bell's vireo (*Vireo bellii pusillus*)	TRTP FRED ID# 011211	Sheet 2
loggerhead shrike (*Lanius ludovicianus*)	TRTP FRED ID# 006706, 006705, 006695, 000436	Sheet 2
merlin (*Falco columbarius*)	TRTP FRED ID# 003398, 003191, 003194	Sheet 2

Species	Observation Details	Figure 2 Sheet Number
peregrine falcon (*Falco peregrinus anatum*)	TRTP FRED ID# 002258, 014601, 010189, 010046	Sheet 2
prairie falcon (*Falco mexicanus*)	TRTP FRED ID# 010287	Sheet 2
sharp-shinned hawk (*Accipiter striatus*)	TRTP FRED ID# 003541, 010880	Sheet 2
Swainson's hawk (*Buteo swainsoni*)	TRTP FRED ID# 007517, 014444	Sheet 2
yellow warbler (*Dendroica petechia brewsteri*)	TRTP FRED ID# 001374, 001275, 001260, 001140	Sheet 2

Birds Protected by the Migratory Bird Treaty Act and California Fish and Game Code The Project Component provides potential nesting habitat for bird species that are protected under the Migratory Bird Treaty Act and California Fish and Game Code, including raptors. During TRTP nesting bird surveys, pre-construction surveys, sweeps, and construction monitoring activities, passerine and raptor nests were observed within the central and western portions of the Project Component (Table 4-2; SCE 2017). Existing stands of vegetation occur within the Project Component and provide general nesting habitat for breeding birds. Non-vegetated areas of the Project Component also provide nesting habitat for ground-nesting bird species such as killdeer (*Charadrius vociferus*) and burrowing owl. Nesting substrates suitable for raptor species, such as red-tailed hawks, or non-raptors, such as common ravens (*Corvus corax*), also are present within the Project Component.

Nesting bird surveys for the Project will be conducted consistent with the Project's Nesting Bird Management Plan as required in MM BR-11. Potential biological impacts on nesting birds will be reduced through the implementation of the APMs and biological MMs summarized in Table ES-1. A disturbance-free buffer of appropriate size will be implemented around all active nests in accordance to the Project's Nesting Bird Management Plan.

Bats

Reconnaissance-level bat habitat assessment surveys were completed in 2007 and 2008 for the TRTP, which overlaps the Project Component (Aspen 2009). No suitable bat habitat was identified within the Project Component for special-status bats. Bat surveys were negative and the results are not described further in this report.

4.2.2 Special-Status Plants and Regulated Trees

Special-status plant surveys conducted from 2007 through 2010, in 2015, and in 2017 resulted in a combined total of eight Southern California black walnut trees mapped the Project Component. All eight of these individuals will be removed during construction (Figure 3). Based on negative survey results from six years of surveys, including focused special-status plant surveys conducted in 2015

and 2017, no other special-status plants are expected to be present within the Project Component. No regulated trees are present in the Project Component.

4.2.3 Vegetation Communities

Vegetation communities mapped within the Project Component (Figure 4) include the following.

- California annual grassland
- Coastal sage scrub
- Disturbed/developed
- Ephemeral drainages
- Man-induced wetlands[1]
- Mulefat scrub
- Non-native woodland
- Riparian woodland
- Ruderal[2]

Five of these vegetation types—coastal sage scrub, ephemeral drainages, man-induced wetlands, mulefat scrub, and riparian woodland—are considered sensitive natural vegetation communities (Ecology and Environment 2016). Vegetation communities were described to be consistent with the *Tehachapi Renewable Transmission Project Revised Biological Resources Specialist Report* (Aspen 2009) and conform to Holland (1986).

California Annual Grassland

Dominant grass and forb species present within California annual grasslands are primarily 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 include tufted poppy (*Eschscholzia caespitosa*) and turkey mullein (*Croton setigerus*). 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* (Aspen 2009).

A small patch of California annual grassland occurs in the western corner of the Project Component (Figure 4, Sheet 1). Two large areas of this community are present in the central portion of the Project Component (Figure 4, Sheets 1 through 3).

[1] The man-induced wetland vegetation at this site is no longer present because the leaking underground irrigation pipe that fed this wetland has been repaired by the adjacent landowner.

[2] The FEIR (Ecology and Environment 2016) identifies this as non-native vegetation.

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 (*Artemisia californica*) or California buckwheat (*Eriogonum fasciculatum*). This community was originally described as coastal sage scrub in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project* (Aspen 2009) and identified as Diegan coastal sage scrub in the FEIR (Ecology and Environment 2016).

Small patches of coastal sage scrub are present in the western and central portions of the Project Component near State Route (SR-) 60 (Figure 4, Sheets 1-3).

Disturbed/Developed

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.

Areas described as disturbed/developed occur throughout the Project Component (Figure 4, Sheets 1–5). This designation was used to characterize numerous paved and unpaved roads, residential developments, and existing development associated with the Project Component.

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 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 were characterized by Insignia (2015a).

Ephemeral drainages are present throughout the northern and central portions of the Project Component (Figure 4, Sheet 1-3).

Man-Induced Wetlands

Man-induced wetlands are vegetated by a wide variety of grasses and perennial herbs adapted for growth in saturated soils, including mulefat (*Baccharis salicifolia*), 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 Project Component developed as a result of a leaking underground irrigation pipe associated with the adjacent nursery. These features contain small amounts of standing water at certain times of the year. Man-induced wetlands were characterized by Insignia (2015a).

Five man-induced wetlands occur in the northeast portion of the Project Component (Figure 4, Sheet 2). However, the wetland vegetation at this site is no longer present because the leaking underground irrigation pipe that fed this wetland has been repaired by the adjacent landowner.

Mulefat Scrub

Mulefat scrub is a riparian scrub community dominated by mulefat. 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 occurs in patches associated with the ephemeral drainages located in the northern portion of the Project Component (Figure 4, Sheet 1 and 2).

Non-Native Woodland

Non-native woodland describes tree stands dominated by eucalyptus (*Eucalyptus* spp.), Brazilian pepper tree (*Schinus terebinthifolius*), 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. Non-native woodlands typically support a limited amount of native vegetation.

Non-native woodland occurs throughout the Project Component associated with maintained public areas often adjacent to disturbed/developed areas (Figure 4, Sheet 1-4).

Ruderal

This vegetation type is dominated by weedy non-native plants that thrive in areas repeatedly disturbed by human activity. This vegetation type includes 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*). The FEIR identified this community as non-native vegetation (Ecology and Environment 2016).

Areas described as non-native vegetation occur throughout the Project Component often adjacent to disturbed/developed areas (Figure 4, Sheets 1–4).

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. 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 (*Washingtonia robusta*), with a few native riparian species, including Goodding's black willow (*Salix gooddingii*) and mulefat. Riparian woodland is described as southern coast live oak riparian forest in the *Revised Biological Specialist Report for the Tehachapi Renewable Transmission Project* (Aspen 2009) and conforms to Holland (1986); however, due to the high level of disturbance, the riparian woodland does not meet the typical vegetation description.

Several small patches of riparian woodland are present in the northern portion of the Project Component and are associated with the ephemeral drainages (Figure 4, Sheet 1-2.

4.2.4 Hydrologic Features

Jurisdictional fetures were observed during the delineation fieldwork, including unvegetated ephemeral streams, riparian vegetation communities, and isolated wetlands. All hydrological features are within the Lower Los Angeles River watershed (Figure 5, Sheets 1 through 5). SCE and USACE agreed to process the Mesa 500-kV Substation Project under an approved jurisdictional delineation. A total of five USACE-jurisdictional features, presumed to have a connection to a Traditional Navigable Water (TNW), were observed, documented and are anticipated to be affected by the Project Component. Eight features under the jurisdiction of the Regional Water Quality Control Board overlap the Project Component. These include all of the USACE-jurisdictional features, plus three additional ephemeral drainages.

CDFW-jurisdictional areas within the Project Component include a total of eight drainages (all of which are RWQCB-jurisdictional), five ditch features (including one cluster of four connected ditches), an isolated man-induced wetland, and riparian vegetation associated with those features. This riparian vegetation consists of mulefat scrub and riparian woodlands exhibiting a high-degree of invasive species cover.

Impacts on jurisdictional features from the Project Component[3] are summarized in Table 4-3. Results of the delineation for the Project Component are depicted in Figure 5.

[3] Note that these impact calculations may be less than the impacts calculated for the Project as a whole, as described in the various jurisdictional permits. The NTPR-1 Project Component does not reflect the final impact areas, which are included in the permit impact calculations.

Table 4-3. Impacts on Jurisdictional Features

Jurisdictional Feature Type	Approximate Impact Areas (Acres)		Total
	Permanent	Temporary	
USACE/RWQCB/CDFW Non-wetland Water	0.28	0.03	0.30
RWQCB/CDFW Non-wetland Water	0.30	0.01	0.31
CDFW Streambed	3.65	0.40	4.05
CDFW Riparian (Riparian woodland)	0.14	0.03	0.17
CDFW Riparian (Mulefat Scrub)	0.04	N/A	0.04
Isolated Man-Induced Wetland[a]	0.04	N/A	0.04

CDFW = California Department of Fish and Wildlife
RWQCB = Regional Water Quality Control Board
USACE = U.S. Army Corps of Engineers

[a] The man-induced wetland area is a cluster of five small, isolated wetland features, which are dominated by perennial emergent species such as tall flatsedge (*Cyperus eragrostis*), broad-leaved cattail (*Typha latifolia*), and broadleaf pepperweed (*Lepidium latifolium*). This area was fed by a leaking underground irrigation pipe from the adjacent nursery, which has since been fixed by the nursery owner. As a result, this wetland is no longer being supported by a supply of freshwater.

4.3 Potential Impacts on Biological Resources

Potential permanent impacts are anticipated from modifications to the existing Mesa Substation, substation support components, transmission line relocations, subtransmission line relocations, telecommunications line relocations, and distribution line relocations. Potential temporary impacts are anticipated from modifications to the existing Mesa Substation, substation support components, transmission line relocations, subtransmission line relocations, telecommunications line relocations, and distribution line relocations. Table 4-4 lists the detailed impacts by vegetation community and impact type.

Potential permanent impacts will affect a total of 49.0 acres, the majority of which contain disturbed/developed (25.1 acres) areas and ruderal areas (9.6 acres). Of the remaining 14.3 acres, a 3.0-acre permanent impact will occur on sensitive natural communities. Potential temporary impacts will affect a total of 89.9 acres, the majority of which are disturbed/developed (69.9 acres) areas and ruderal areas (12.9 acres). Of the remaining 7.4 acres, temporary impacts will occur on 3.0 acres of sensitive natural communities.

All work areas adjacent to and within sensitive natural communities will be field-adjusted to avoid and/or minimize impacts on special-status and habitats to the greatest extent feasible. Temporary

impacts to all vegetation communities (including both sensitive vegetation communities and non-sensitive vegetation communities) will be hydroseeded with native seed mixtures, as further described in the HRMP.

Construction of the scope of work associated with NTPR-1 will result in permanent impacts habitat for the coastal California gnatcatcher, south of the existing Mesa Substation site. These impacts will result in the permanent loss of two pairs of coastal California gnatcatcher, resulting in the permanent loss of eight acres of habitat. Further details on these impacts and proposed compensation for these impacts are provided in the Project's Biological Opinion, and the Project's Habitat Restoration and Mitigation Plan (HRMP). Both temporary and permanent impacts to sensitive vegetation communities that may provide habitat for the coastal California gnatcatcher will be mitigated for in accordance with MM BR-3 at offsite locations at a 2.5:1 ratio, as further described in the HRMP.

During construction of the Project Component, all southern California black walnut trees mapped south of the existing Mesa Substation site will be removed. Mitigation for these impacts will be provided at a 4:1 ratio at an offsite location, as further described in the Project's HRMP. No other special-status plants will be affected by the Project Component.

Table 4-4. Maximum Potential NTPR-1 Project Component-Related Impacts by Vegetation Community (acres)

	Modifications to Existing Mesa Substation		Substation Grading		Staging Yards		Retaining Walls, Mechanical Electrical Equipment Room, Storm Drain Installation[1]		Detention Basin		Access Roads		Metropolitan Water District Waterline Relocation		Groundwater Monitoring Well Decommissioning		Transmission Line Relocations		Subtransmission Line Relocations		Telecommunications Line Relocations		Distribution Line Relocations		Total		
Vegetation	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Perm**	**Temp**	**Grand Total**
California Annual Grassland	0.00	0.00	0.00	0.27	0.00	0.16	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.04	0.00	0.00	3.15	1.15	0.00	0.04	0.00	0.17	0.00	0.00	3.15	1.84	4.98
CDFW Riparian – Mulefat Scrub	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04
CDFW Riparian – Riparian Woodland	0.00	0.00	0.14	0.00	0.00	<0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.03	0.17
CDFW Streambed	0.00	0.02	2.50	0.84	0.00	0.27	0.00	0.00	0.15	0.00	0.00	0.11	0.00	0.06	0.00	0.00	0.01	0.08	0.00	0.03	0.00	0.00	0.00	0.00	2.65	1.41	4.07
Coastal Sage Scrub	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.04	0.00	0.00	0.00	0.00	0.00	1.36	1.36
Disturbed/ Developed	0.00	21.02	21.27	8.79	0.00	29.50	0.00	0.00	2.53	0.00	0.00	5.50	0.00	1.27	0.00	0.00	1.30	2.25	0.01	0.29	0.00	0.66	<0.01	0.33	25.11	69.61	94.73
Mulefat Scrub	0.00	0.00	0.20	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.16	0.35
Non-Native Woodland	0.00	0.13	8.10	0.33	0.00	0.64	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	0.57	0.00	0.00	0.08	0.76	0.00	0.02	0.00	0.09	0.00	0.00	8.18	2.55	10.73
Ruderal	0.00	<0.01	9.26	8.39	0.00	1.73	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.31	1.29	0.02	1.07	0.00	0.00	<0.01	0.31	9.60	12.87	22.47
Man-Induced Wetlands	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04
Total	**0.00**	**21.18**	**41.47**	**20.07**	**0.00**	**32.34**	**0.00**	**0.00**	**2.67**	**0.00**	**0.00**	**5.72**	**0.00**	**1.94**	**0.00**	**0.00**	**4.85**	**5.61**	**0.03**	**1.50**	**0.00**	**0.93**	**0.01**	**0.64**	**49.03**	**89.91**	**138.94**

[1] At numerous locations within the NTPR-1 footprint, multiple project features and related activities may result in ground disturbance on the same areas. To ensure that each disturbed location is counted only once, the following precedence orders were employed in attributing disturbance. First, permanent disturbance by one or more substation project component took precedence over any temporary disturbance. Second, specific substation project components were rank-ordered for attributing disturbance in descending order as follows: Substation Grading, Staging Yards, Metropolitan Water District Waterline Relocation, Transmission Line Relocations, Subtransmission Line Relocations, Distribution Line Relocations, Telecommunications Line Relocations, Groundwater Monitoring Well Decommissioning, Storm Drain Installation, Mechanical Electrical Equipment Room, and Retaining Walls.

Chapter 5
Impact Avoidance and Mitigation

To help avoid and/or minimize impacts on sensitive biological resources from construction activities, pre-construction surveys, clearance sweeps, and onsite monitoring will be will be implemented to determine if special-status species are present within the Project Component. APMs and MMs for the Project Component, including those specified in the Biological Opinion (BO) and the SAA, will be implemented to avoid potential impacts on sensitive biological resources. The applicable APMs, Project FEIR MMs, BO MMs, and permit conditions (i.e., 404 NWP, 401 WQC, and LSAA) for the Project Component are summarized below and in Table ES-1.

- APM BIO-3, BIO-4, and BIO-5; MM BR 1, MM BR-2, BR-9, BR-12, BR-13; LSAA MM 2.9; and MM 2.12; and BO CM-7 through CM-31 will be implemented to avoid and minimize impacts on special-status species, including the coastal California gnatcatcher.
- MM BR-2, LSAA MM 2.15, and BO CM-10 and CM-11 will be implemented to ensure that removal of native vegetation is avoided and/or minimized to the extent feasible.
- MM BR-14 and LSAA MM 2.19 through 2.38 will be implemented to ensure that no there are no effects on riparian or aquatic features without appropriate regulatory agency permits in place.
- APM BIO-1, BIO-3, BIO-4, and BIO-5; MM BR-1, BR-2, BR-3, BR-9, BR-10, BR-12, BR-13; LSAA MM 2.12; BO GM-01, MM-02, MM-03, MM-04; and BO CM-12 through CM-14, CM-16, CM-17, and CM-25, through CM-27 will be implemented to ensure that potential impacts on special-status wildlife and plants species are avoided to the extent feasible.
- MM BR-5 and LSAA MM 1.11 will be implemented so that all construction crews and contractors participate in a Worker Environmental Awareness Program.
- APM BIO-8, MM BR-3, MM BR-7, MM BR-8, LSAA MM 3.1 through 3.12, and BO CM-1 through CM-6 will be implemented to ensure that, should any special-status species or their habitats be affected by the development of the Project, appropriate compensatory mitigation, as determined by the regulatory agencies, will be provided.
- APM BIO-6 and MM BR-11, LSAA MM 2.10 and 2.11, and BO CM-12 through CM-14, CM-16, CM-17, and CM-25, through CM-27 will be implemented to avoid impacts on nesting birds. The Project Component is within areas that provide suitable nesting habitat for birds protected under the federal Migratory Bird Treaty Act, and construction is scheduled to occur within the migratory bird nesting season (February 15–August 1). Therefore, surveys for nesting birds will be required. All required surveys, protection measures, and monitoring will be implemented by SCE in accordance with APM BIO-6, MM BR-11, and the Project Nesting Bird Management Plan.
- APM BIO-7 and MM BR-15 will be implemented to ensure all transmission and sub-transmission towers and poles are designed to be raptor safe.
- LSA MM 2.39, MM 2.40, and MM 2.41 will be implemented to ensure the secure containment of trash and spills from the Project site.

- MM BR-4 and LSAA MM 2.17, MM 2.18, MM 2.43 and MM 2.44 will be implemented to avoid the spread of noxious weeds during prior to and during construction and to ensure all herbicide is used and handled in accordance with applicable federal, state, and local regulations.
- LSAA MM 2.45, MM 2.46, and MM 2.47 will be implemented to avoid the spread of invasive plant species into the Project site.

Chapter 6
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Attachment A
Figures

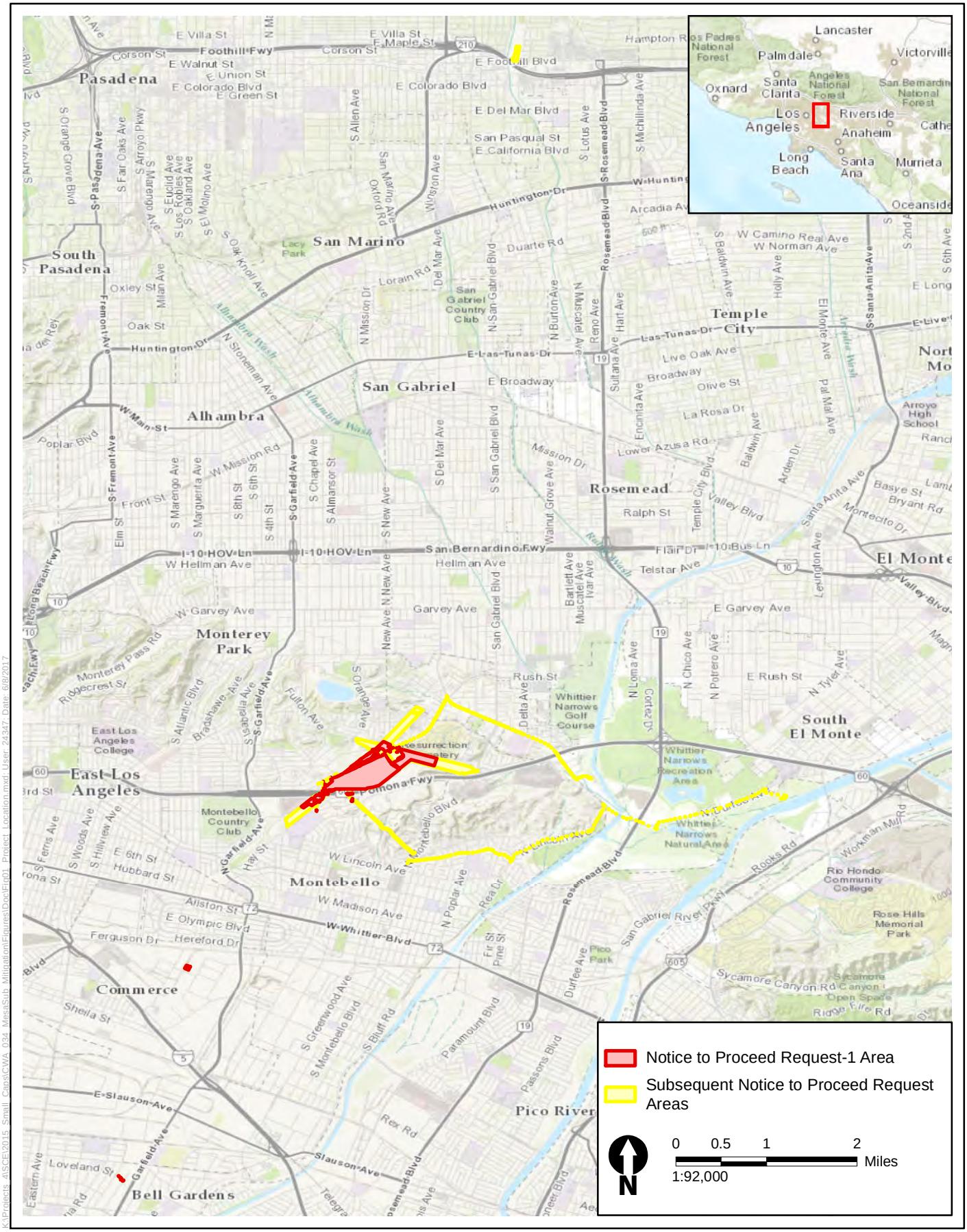

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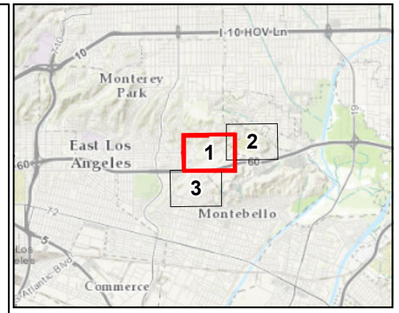
Figure 1
Project Location



Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Coastal California Gnatcatcher Results

- Observation
- Nest Successful
- Nest Unknown Outcome
- Nest Failed

Species Observations

- Cooper's Hawk (*Accipiter cooperii*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Merlin (*Falco columbarius*)
- Peregrine Falcon (*Falco peregrinus*)
- Prairie Falcon (*Falco mexicanus*)
- Sharp-shinned Hawk (*Accipiter striatus*)
- Swainson's Hawk (*Buteo swainsoni*)
- Yellow Warbler (*Dendroica petechia*)

Source: Species Data - FRED, 2017, Rocks Biological Consulting, 2015; Imagery-SCE, 2017.

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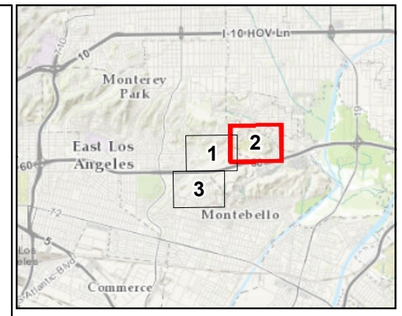
Figure 2, Sheet 1
Wildlife
Mesa 500-kV Substation Project



- Permanent Impact Areas
- Temporary Impact Areas
- Restricted Use Area

Coastal California Gnatcatcher Results

- Observation
- Nest Successful
- Nest Failed

Species Observations

- Cooper's Hawk (*Accipiter cooperii*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Merlin (*Falco columbarius*)
- Swainson's Hawk (*Buteo swainsoni*)

Source: Species Data - FRED, 2017, Rocks Biological Consulting, 2015; Imagery-SCE, 2017.

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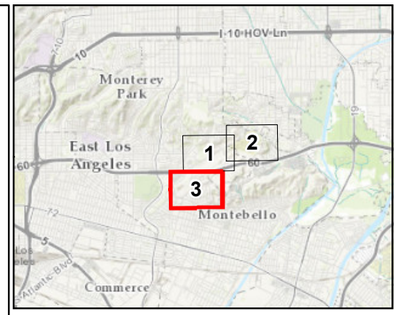
Figure 2, Sheet 2
Wildlife
Mesa 500-kV Substation Project



Permanent Impact Areas

Temporary Impact Areas

Coastal California Gnatcatcher Results

- Observation

Source: Species Data - FRED, 2017, Rocks Biological Consulting, 2015; Imagery-SCE, 2017.

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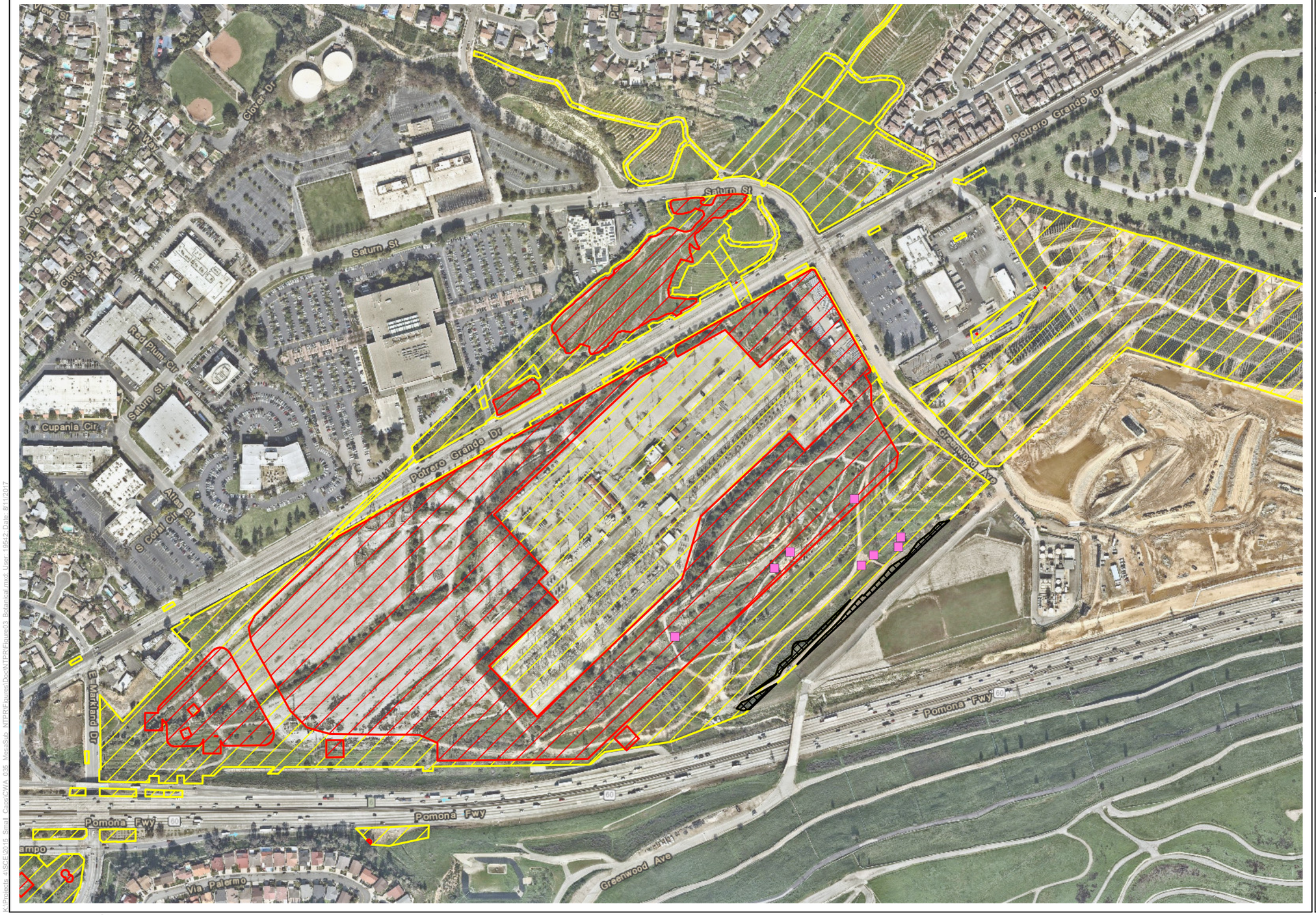
Figure 2, Sheet 3
Wildlife
Mesa 500-kV Substation Project



Source: Species-Noreas, ICF-2011-2017; Imagery-SCE, 2017.

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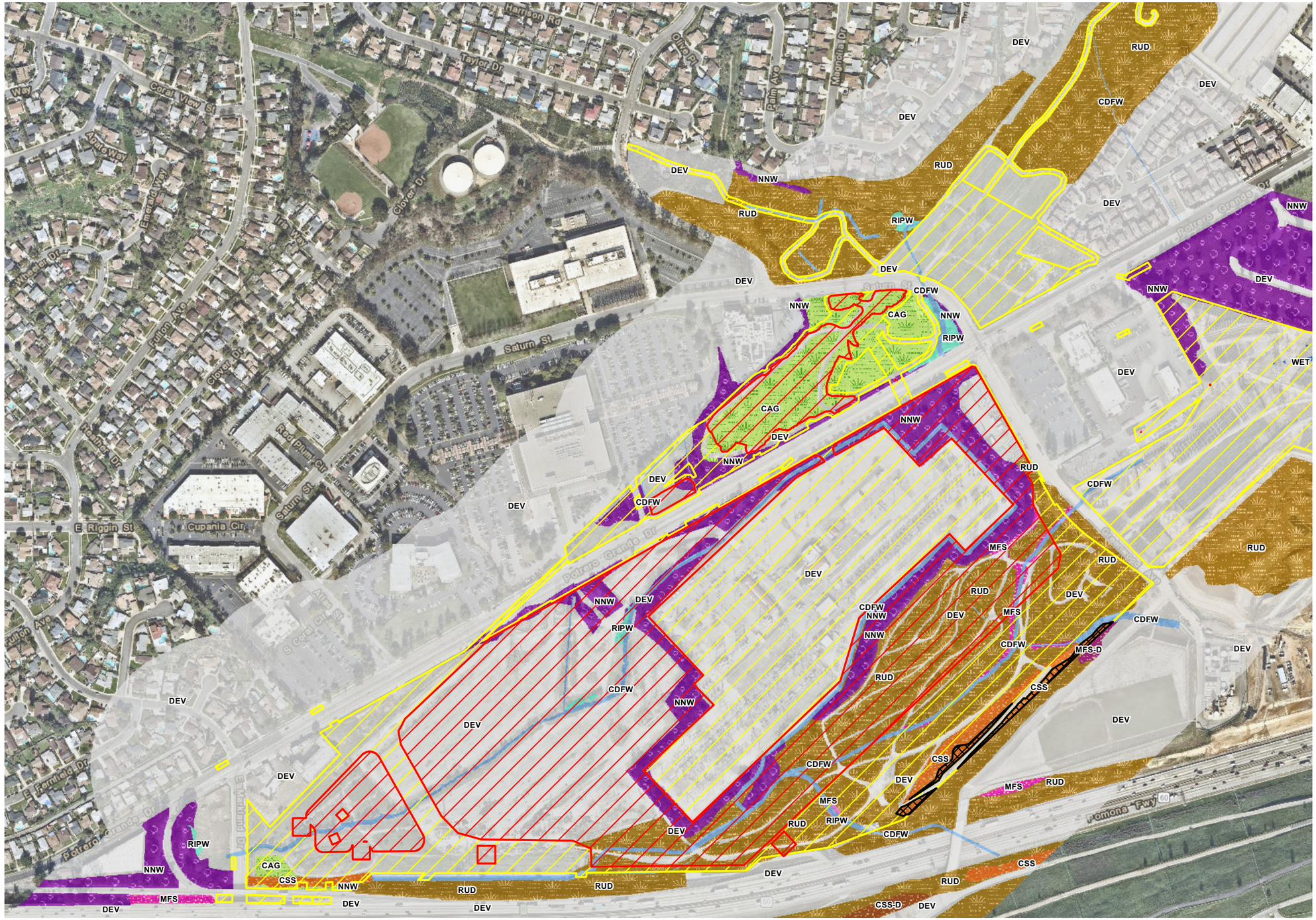
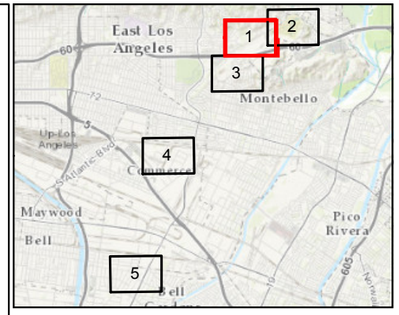
Figure 3
Botanical
Mesa 500-kV Substation Project





- Permanent Impact Areas
- Temporary Impact Areas
- Restricted Use Area

Vegetation

- CDFW Riparian - MFS
- CDFW Riparian - RIPW
- CDFW Streambed (CDFW)
- California Annual Grassland (CAG)
- Coastal Sage Scrub (CSS)
- Disturbed Coastal Sage Scrub (CSS-D)
- Disturbed/Developed (DEV)
- Mulefat Scrub (MFS)
- Mulefat Scrub-Disturbed (MFS-D)
- Non-Native Woodland (NNW)
- Ruderal (RUD)
- Wetlands

Source: Vegetation-Insignia, 2015; Imagery-SCE-2017, NAIP-2016.

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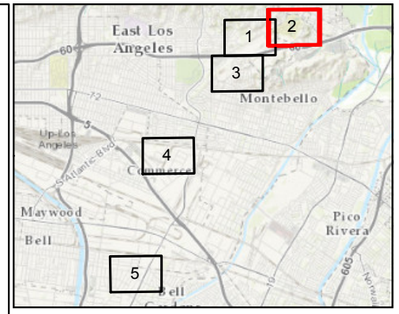
Figure 4, Sheet 1
Vegetation
Mesa 500 kV-Substation Project



Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Vegetation

- CDFW Streambed (CDFW)
- Coastal Sage Scrub (CSS)
- Disturbed/Developed (DEV)
- Mulefat Scrub-Disturbed (MFS-D)
- Non-Native Woodland (NNW)
- Ruderal (RUD)
- Wetlands

Source: Vegetation-Insignia, 2015; Imagery-SCE-2017, NAIP-2016.

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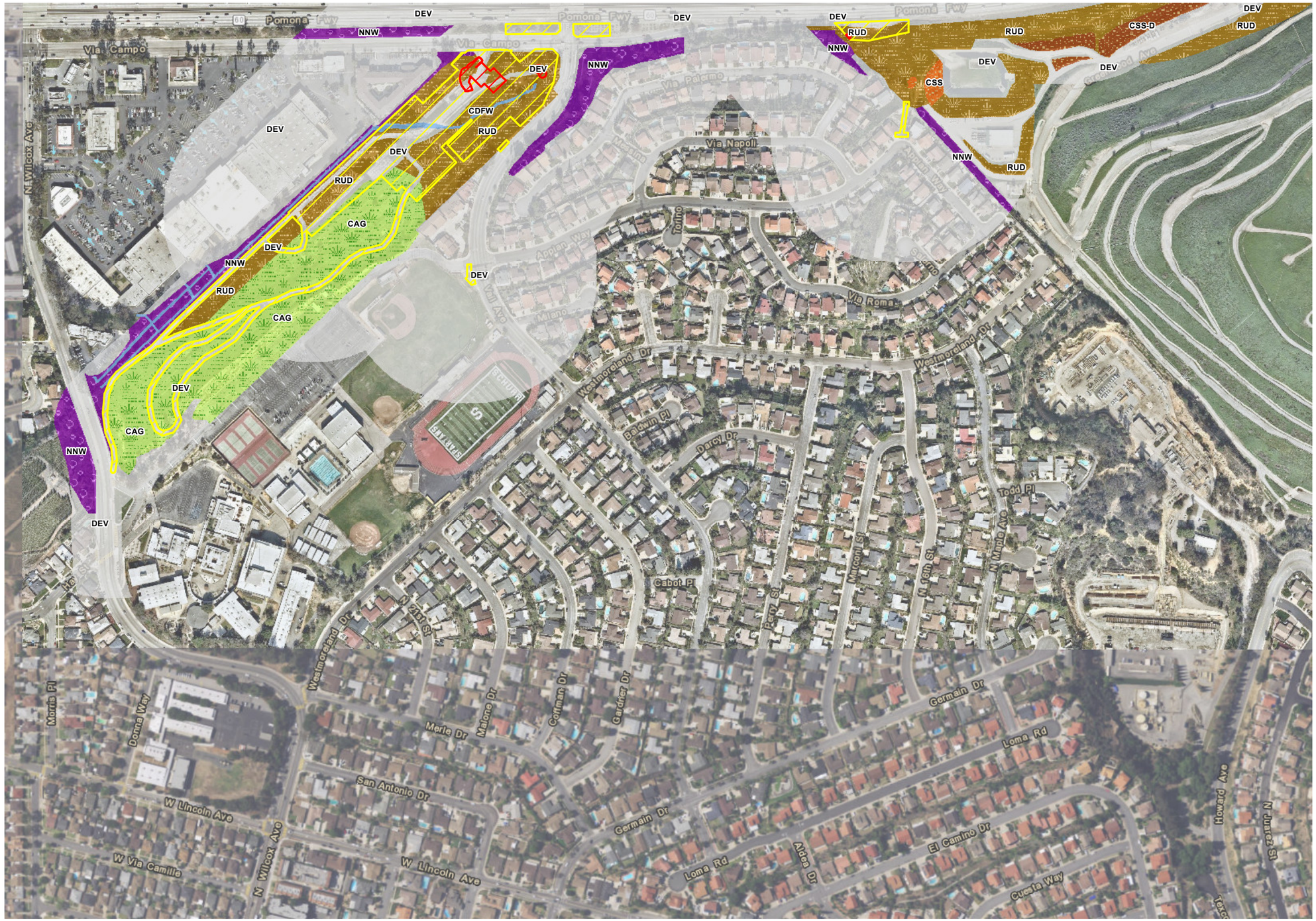
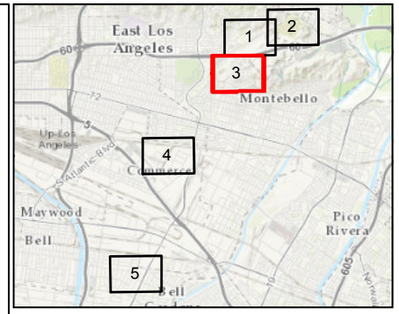
1:4,800

N

Figure 4, Sheet 2
Vegetation
Mesa 500 kV-Substation Project





- Permanent Impact Areas
- Temporary Impact Areas

Vegetation

- CDFW Streambed (CDFW)
- California Annual Grassland (CAG)
- Coastal Sage Scrub (CSS)
- Disturbed Coastal Sage Scrub (CSS-D)
- Disturbed/Developed (DEV)
- Non-Native Woodland (NNW)
- Ruderal (RUD)

Source: Vegetation-Insignia, 2015; Imagery-SCE-2017, NAIP-2016.

0 200 400 Feet
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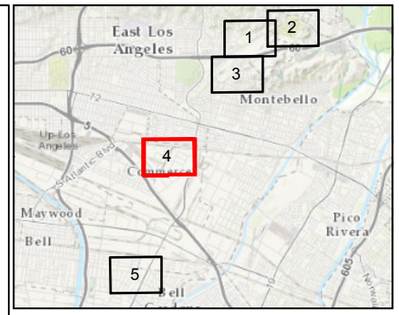
Figure 4, Sheet 3
Vegetation
Mesa 500 kV-Substation Project



Permanent Impact Areas

Temporary Impact Areas

Vegetation

Disturbed/Developed (DEV)

Non-Native Woodland (NNW)

Ruderal (RUD)

Source: Vegetation-Insignia, 2015; Imagery-SCE-2017, NAIP-2016.

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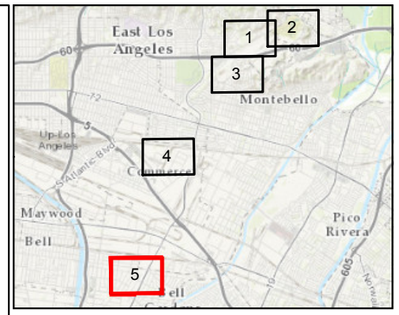
Figure 4, Sheet 4
Vegetation
Mesa 500 kV-Substation Project



Permanent Impact Areas

Temporary Impact Areas

Vegetation

Disturbed/Developed (DEV)

Source: Vegetation-Insignia, 2015; Imagery-SCE-2017, NAIP-2016.

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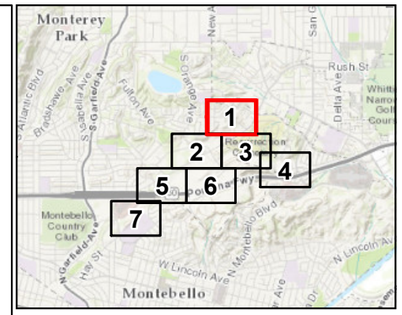
N

Figure 4, Sheet 5
Vegetation
Mesa 500 kV-Substation Project



Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Waters

RWQCB/CDFW
USACE/RWQCB/CDFW
CDFW Streambed
CDFW Riparian - MFS
CDFW Riparian - RIPW
Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

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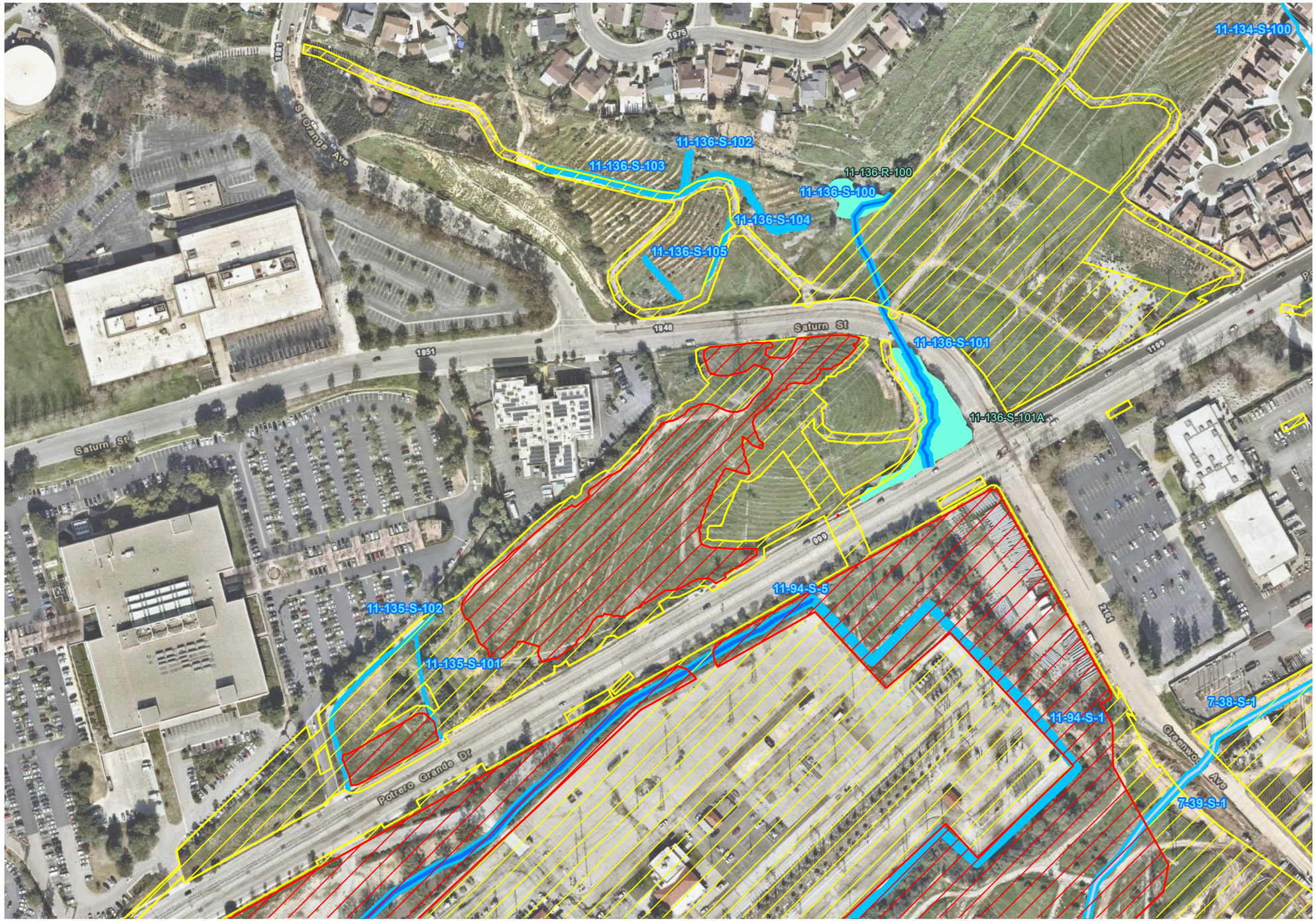
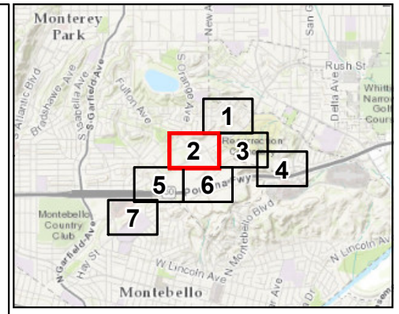
1:2,400

Figure 5, Sheet 1
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project





Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Waters

RWQCB/CDFW
USACE/RWQCB/CDFW
CDFW Streambed
CDFW Riparian - MFS
CDFW Riparian - RIPW
Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

0 100 200 Feet
1:2,400

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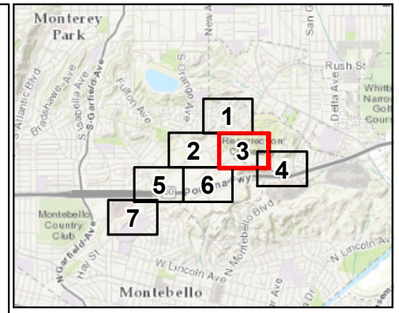
Figure 5, Sheet 2
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project



- Permanent Impact Areas
- Temporary Impact Areas
- Restricted Use Area

Waters

- RWQCB/CDFW
- USACE/RWQCB/CDFW
- CDFW Streambed
- CDFW Riparian - MFS
- CDFW Riparian - RIPW
- Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

0 100 200 Feet
1:2,400

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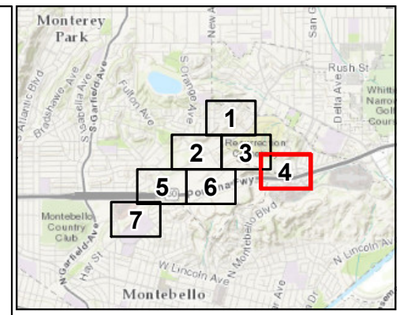
Figure 5, Sheet 3
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project



Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Waters

RWQCB/CDFW
USACE/RWQCB/CDFW
CDFW Streambed
CDFW Riparian - MFS
CDFW Riparian - RIPW
Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

0 100 200 Feet
1:2,400

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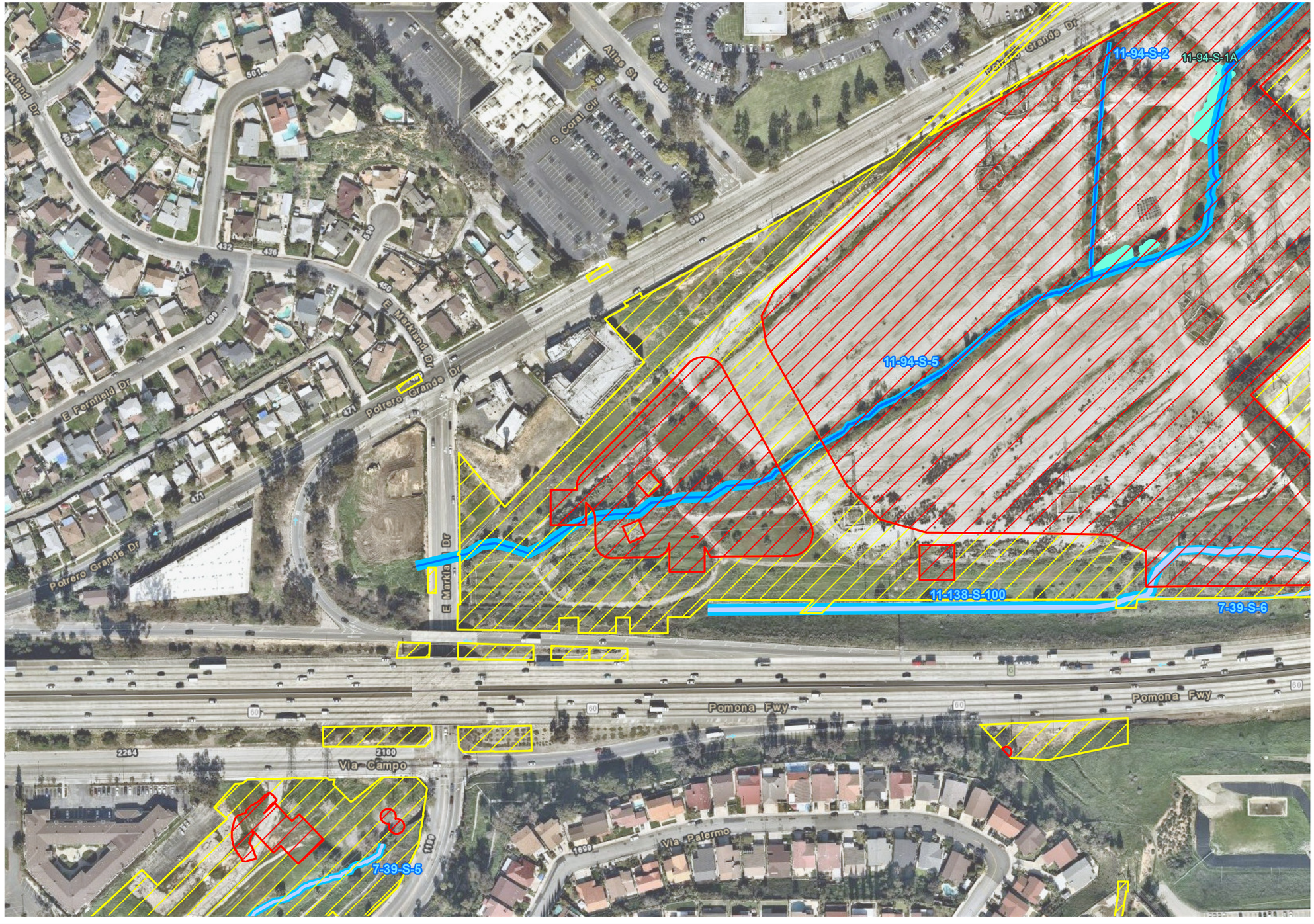
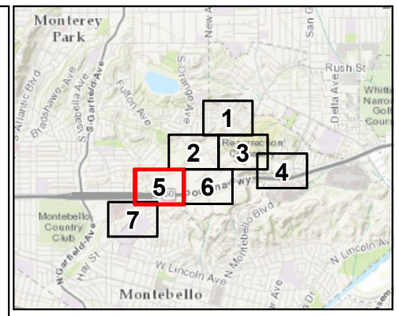
Figure 5, Sheet 4
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project





Permanent Impact Areas
Temporary Impact Areas
Restricted Use Area

Waters

RWQCB/CDFW
USACE/RWQCB/CDFW
CDFW Streambed
CDFW Riparian - MFS
CDFW Riparian - RIPW
Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

0 100 200 Feet
1:2,400

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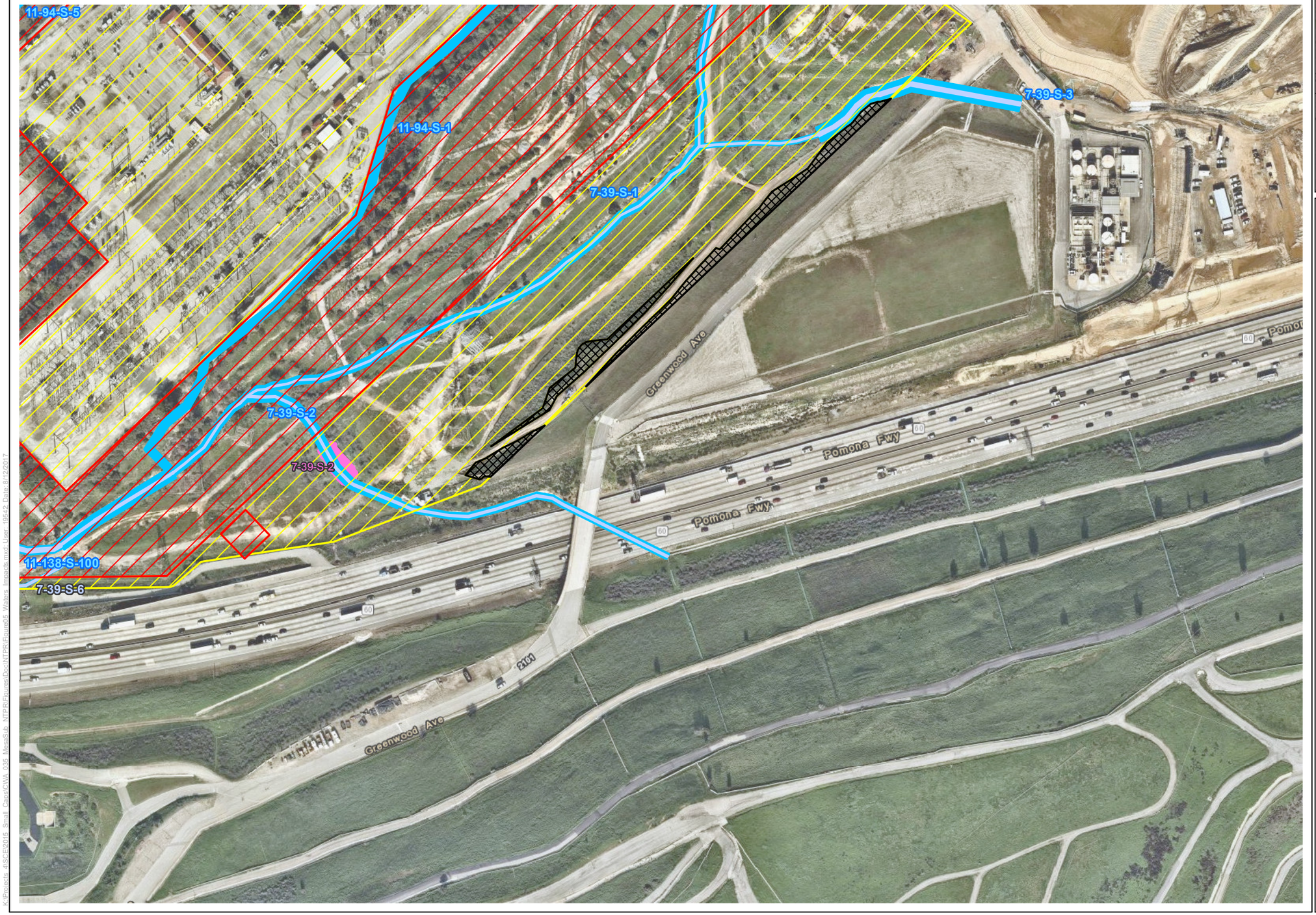
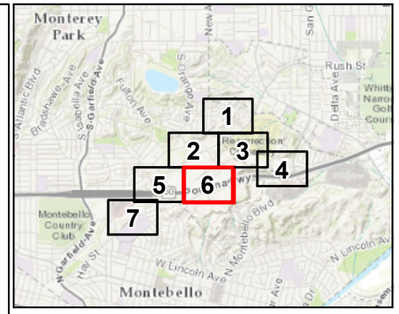
Figure 5, Sheet 5
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project





- Permanent Impact Areas
- Temporary Impact Areas
- Restricted Use Area

Waters

- RWQCB/CDFW
- USACE/RWQCB/CDFW
- CDFW Streambed
- CDFW Riparian - MFS
- CDFW Riparian - RIPW
- Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

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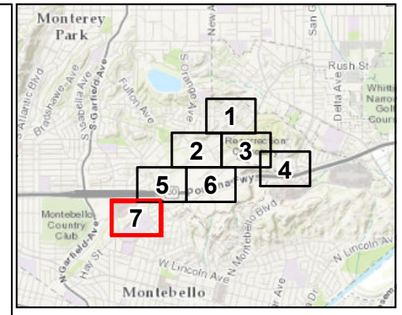
0 100 200 Feet

1:2,400

Figure 5, Sheet 6
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project



- Permanent Impact Areas
- Temporary Impact Areas
- Restricted Use Area

Waters

- RWQCB/CDFW
- USACE/RWQCB/CDFW
- CDFW Streambed
- CDFW Riparian - MFS
- CDFW Riparian - RIPW
- Wetlands

Source: Waters-Insignia, 2015; Imagery-SCE, 2017.

0 100 200 Feet
1:2,400

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Figure 5, Sheet 7
Temporary and Permanent Impacts to Waters
Mesa 500-kV Substation Project

Appendix C

Construction Equipment

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Survey				2				
Survey Trucks		Gasoline	1			10	4/1/17 - 12/31/2019	Substation
Grading Phase 1				14				
Dozer		Diesel	2		20	10		
Loader		Diesel	2		20	10		
Scraper		Diesel	4		20	10		
Grader		Diesel	2		20	10		
Water Truck		Diesel	4		20	10	4/1/17 - 1/13/18	Substation
4X4 Backhoe		Diesel	0		20	10		
4X4 Tamper		Diesel	0		20	10		
Tool Truck		Gasoline	1		20	10		
Pickup 4X4		Gasoline	3		20	10		
Haul Truck		Gasoline	20		20	10		
Fencing Phase 1 Block Wall				16				
Bobcat			1			10		
Forklift		Propane	2			10		
4X4 Backhoe		Diesel	1			10		
Concrete Pump		Diesel	1			6 hours/day for 25 days	10/13/17 - 6/13/18	Substation
Flatbed Truck			1			2		
Crewcab Truck		Gasoline	1			2		
Civil Phase 1				60				
Excavator		Diesel	3			10		
Foundationauger		Diesel	3			8		
Backhoes		Diesel	6			10		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Dump truck		Diesel	3			6		
Skip Loader		Diesel	3			7		
Water Truck		Diesel	3			10	10/1/17 - 5/31/18	Substation
Bobcat Skid Steer		Diesel	4			8		
Forklift		Propane	4			6		
17 Ton Crane		Diesel	2			5 hours/day for 45 days		
Concrete Pump Trk		Diesel	1			3		
Tool Truck		Gasoline	4					
MEER Phase 1				50				
Carry all Truck		Gasoline	2			3		
tool truck		Gasoline	5			2		
Stake Truck		Gasoline	1			5		
20TonCrane		Diesel	1			5 hours/day for 60 days		
Concrete Pump Truck		Diesel	1			5 hours/day for 40 days		
Forklift		Propane	3			5		
Backhoes		Diesel	2			10 hours/day for 60 days	9/15/17 - 5/15/18	Substation
Loader		Diesel	1			10 hours/day for 30 days		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Bobcat Skid Steer		Diesel	2			10 hours/day for 60 days		
Manlifts		Propane	2			10 hours/day for 60 days		
400KW Generator		Diesel	1			12		
Electrical Phase 1				50				
Scissor Lifts		Propane	4			5		
Manlifts		Propane	4			5		
Reach Manlift		Propane	3			5		
15 Ton Crane		Diesel	2			5		
20 Ton Crane		Diesel	1			10 hours/day for 80 days		
50 Ton Crane		Diesel	1			8 hours/day for 100 days	10/15/17 - 7/15/18	Substation
100 Ton Crane		Diesel	1			8 hours/day for 60 days		
Flatbed Truck		Gasoline	1			5		
Tool Trailer			2			3		
Forklift		Propane	3			6		
Crew Trucks		Gasoline	3			2		
Wiring Phase 1				50				
Manlift		Propane	3			5		
Tool Trailer			2			3	12/15/17 - 8/15/18	Substation

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Forklift		Propane	3			3		
Testing Phase 1				9				
Crew Truck		Gasoline	4			4	1/15/18 - 9/15/18	Substation
Control Building Phase 1				50				
Carry all Truck		Gasoline	2			3		
tool truck		Gasoline	5			2		
Stake Truck		Gasoline	1			5		
20 Ton Crane		Diesel	1			5 hours/day for 60 days		
Concrete Pump Trk		Diesel	1			5 hours/day for 40 days		
Forklift		Propane	3			5		
Backhoes		Diesel	2			10 hours/day for 100 days	9/15/17 - 10/15/18	Substation
Loader		Diesel	1			10 hours/day for 30 days		
Bobcat Skid Steer		Diesel	2			10 hours/day for 60 days		
Manlifts		Propane	2			10 hours/day for 120 days		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Electrical Demo Phase 2				20				
Manlifts		Propane	2			6		
Reach Lift		Propane	3			6		
15 ton Crane		Diesel	1			6		
50 ton Crane		Diesel	1			6	1/15/18 - 2/20/18	Substation
Tool Trailer			2			5		
Forklift		Propane	2			6		
Crew Trucks		Gasoline	3			2		
Civil Demo / Grading Phase 2				14				
Excavator		Diesel	2			10		
Backhoes		Diesel	2			10		
Dump truck		Diesel	3			10		
Skip Loader		Diesel	2			10		
Water Truck		Diesel	2			10		
Bobcat Skid Steer		Diesel	2			10	2/21/18 - 3/20/18	Substation
Forklift		Propane	2			6		
Dozer		Diesel	2			10		
Loader		Diesel	2			10		
Scraper		Diesel	2			10		
Grader		Diesel	1			10		
Water Truck		Diesel	3			10		
Civil Installation Phase 2				50				
Excavator		Diesel	3			10		
Foundationauger		Diesel	3			8		
Backhoes		Diesel	6			10		
Dump truck		Diesel	3			6		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Skip Loader		Diesel	3			7		
Water Truck		Diesel	3			10		
Bobcat Skid Steer		Diesel	4			8		
Forklift		Propane	4			6	7/16/18 - 3/31/19	Substation
17 Ton Crane		Diesel	2			5 hours/day for 45 days; 5 hours/day for 40 days		
Concrete Pump Trk		Diesel	1			3		
Tool Truck		Gasoline	4			3		
Electrical Phase 2 Including Wiring				50				
Scissor Lifts		Propane	4			5		
Manlifts		Propane	4			5		
Reach Manlift		Propane	3			5		
15 Ton Crane		Diesel	2			5		
20 Ton Crane		Diesel	1			10 hours/day for 80 days		
50 Ton Crane		Diesel	1			8 hours/day for 100 days	7/30/18 - 3/31/19	Substation
100 Ton Crane		Diesel	1			8 hours/day for 60 days		
Flatbed Truck		Gasoline	1			5		
Tool Trailer			2			3		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Forklift		Propane	3			6		
Crew Trucks		Gasoline	3			2		
Maintenance Crew Equipment Check Phase 1 & 2				3				
MaintenanceTrucks		Gasoline	2			5	1/25/19 - 3/31/19	Substation
Testing Phase 2 Including Cutovers				9				
Crew Truck		Gasoline	4			4	9/16/18 - 3/31/20	Substation
Survey Phase 3				2				
Survey Trucks		Gasoline	1			10	2/1/2020 - 5/31/21	Substation
Civil Demo / Grading Phase 3				75				
Excavator		Diesel	3			10		
Backhoes		Diesel	4			10		
Dump truck		Diesel	4			10		
Skip Loader		Diesel	3			10		
Water Truck		Diesel	2			10		
Bobcat Skid Steer		Diesel	4			10		
Forklift		Propane	4			10	12/1/19 - 7/31/20	Substation
Dozer		Diesel	3			10		
Loader		Diesel	2			10		
Scraper		Diesel	6			10		
Grader		Diesel	2			10		
Water Truck		Diesel	4			10		
Haul Truck		Gasoline	30			10		
Civil Demo / Grading Phase 3				75				
Excavator		Diesel	4			10		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Foundationauger		Diesel	4			10	4/1/20 - 1/31/21	Substation
Backhoes		Diesel	5			10		
Dump truck		Diesel	3			10		
Skip Loader		Diesel	2			10		
Water Truck		Diesel	4			10		
Bobcat Skid Steer		Diesel	6			10		
Forklift		Propane	3			5		
Tool Trailer			2			5		
Electrical Phase 3 Including Wiring				80				
Scissor Lifts		Propane	4			10	6/1/20 - 5/31/21	Substation
Manlifts		Propane	4			10		
Reach Manlifts		Propane	3			10		
15 Ton Crane		Diesel	1			6		
20 Ton Crane		Diesel	1			5		
100 Ton Crane		Diesel	1			10 hours/day for 80 days		
Tool Trailer			3			5		
Forklift		Propane	4			7		
Crew Trucks		Gasoline	3			7		
Flatbed Truck		Gasoline	1			7		
500 KW Generator		Diesel	1			10 hours/day for 120 days		
Maintenance Crew Equipment Check Phase 3				5				

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
MaintenanceTrucks		Gasoline	3			5	4/15/20 - 5/31/21	Substation
Testing Phase 3				9				
Crew Truck		Gasoline	4			3	4/1/20 - 5/31/21	Substation
Test & Maintenance Building Phase 3				50				
Carry all Truck		Gasoline	2			3		
tool truck		Gasoline	5			2		
Stake Truck		Gasoline	1			5		
20 Ton Crane		Diesel	1			5 hours/day for 60 days		
Concrete Pump Trk		Diesel	1			5 hours/day for 40 days		
Forklift		Propane	3			5		
Backhoes		Diesel	2			10 hours/day for 60 days	4/1/20 - 5/1/21	Substation
Loader		Diesel	1			10 hours/day for 30 days		
Bobcat Skid Steer		Diesel	2			10 hours/day for 60 days		
Manlifts		Propane	2			10 hours/day for 60 days		
Asphalting & Fencing Phase 3				25				

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Paving Roller		Diesel	2			10 hours/day for 40 days		
Asphalt Paver		Diesel	1			10 hours/day for 40 days		
Stake Truck		Gasoline	2			5 hours/day for 40 days		
Tractor		Diesel	1			10 hours/day for 40 days	3/1/21 - 6/30/21	Substation
Dump Truck		Diesel	1			2		
Crew Trucks		Gasoline	2			10 hours/day for 40 days		
Asphalt Curb Machine		Diesel	1			6 hours/day for 60 days		
Concrete Pump		Diesel	1			10		
Forklift		Propane	1					
Backhoe		Diesel	1					
Survey (1)				4	Duration of Project		Various	
1-Ton Truck, 4x4	300	Gas	2		Duration Of Project	4	4/3/17 – 5/5/20; 11/1/20 -	Transmission/Subtransmission
Construction and Materials Yard (2)				4			2 Yards	
1-Ton Truck, 4x4	300	Gas	1			4		
R/T Forklift	200	Diesel	1		Duration of	5	5/18/17	

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Boom/Crane Truck	350	Diesel	1		Project for Each Yard	5	5/18/17 – 5/5//20	Transmission/Subtransmission
Water Tanker/Truck	400	Diesel	1			10		
Truck, Semi-Tractor	400	Diesel	1			6		
R/W Clearing (3)				5	20		1 Mile	
1-Ton Truck, 4x4	300	Gas	2		20	10	4/3/17 – 4/28/17	Transmission/Subtransmission
Backhoe/Front Loader	350	Diesel	2		20	7		
Track Type Dozer	350	Diesel	2		20	7		
Road Grader	350	Diesel	2		20	7		
Water Truck	300	Diesel	2		20	9		
Lowboy Truck/Trailer	500	Diesel	2		20	5		
Roads & Landing Work (4)				12	35		6 Miles & 45 Pads	
1-Ton Truck, 4x4	300	Gas	2		35	5	6/1/17 – 2/3/20; 10/23/20 – 10/31/20	Transmission/Subtransmission
Backhoe/Front Loader	350	Diesel	2		35	7		
Track Type Dozer	350	Diesel	2		35	7		
Motor Grader	350	Diesel	2		35	5		
Water Truck	300	Diesel	2		35	10		
Drum Type Compactor	250	Diesel	2		35	5		
Excavator	300	Diesel	2		35	7		
Lowboy Truck/Trailer	500	Diesel	2		35	4		
Guard Structure Installation (6)				6	35		46 Structures	
3/4-Ton Truck, 4x4	275	Gas	1		35	8	7/7/17 – Transmission/Subtransmission	
1-Ton Truck, 4x4	300	Diesel	1		35	8		
Compressor Trailer	120	Diesel	2		35	7		
Manlift/Bucket Truck	350	Diesel	2		35	5		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Boom/Crane Truck	500	Diesel	2		35	8	5/5/20	Transmission/Subtransmission
Water Truck	350	Diesel	2		35	10		
Auger Truck	500	Diesel	2		35	8		
Extendable Flat Bed Pole Truck	350	Diesel	2		35	8		
Shoo-fly Pole Haul (7)				4	7		7	
3/4-Ton Truck, 4x4	275	Gas	1		7	10		
Water Truck	300	Diesel	1		7	10	5/25/17 – 6/5/17	Transmission/Subtransmission
Boom/Crane Truck	350	Diesel	2		7	8		
Flat Bed Pole Truck	400	Diesel	2		7	10		
Shoo-fly Pole Assembly (8)				12	4		7	
3/4-Ton Truck, 4x4	275	Gas	2		4	10		
Compressor Trailer	120	Diesel	1		4	10	6/1/17 – 6/5/17; 9/18/17 – 9/19/17	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Diesel	2		4	10		
Water Truck	350	Diesel	1		4	10		
Boom/Crane Truck	350	Diesel	1		4	10		
Install Shoo-fly Pole (9)				12	4		7	
1-Ton Truck, 4x4	300	Diesel	2		4	6		
Manlift/Bucket Truck	350	Diesel	2		4	10		
Boom/Crane Truck	350	Diesel	2		4	7	6/6/17 – 6/8/17; 9/19/17 – 9/20/17	Transmission/Subtransmission
Auger Truck	210	Diesel	2		4	8		
Water Truck	300	Diesel	2		4	10		
Backhoe/Front Loader	125	Diesel	2		4	10		
Extendable Flat Bed Pole Truck	400	Diesel	2		4	6		
Install Shoo-fly Conductor (10)				15	15		5 Pulls	
3/4-Ton Truck, 4x4	275	Gas	2		15	10		
1-Ton Truck, 4x4	300	Diesel	2		15	10		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Manlift/Bucket Truck	350	Diesel	2		15	10		
Boom/Crane Truck	350	Diesel	2		15	10		
R/T Crane (M)	215	Diesel	2		8	10		
Wire Truck/Trailer	350	Diesel	1		8	10		
Truck mounted – Three drum fly-line pulling machines (Equipped with 3/8-inch steel pulling cable)	350	Diesel	1		8	10	6/9/17 – 9/23/17	Transmission/Subtransmission
Static Truck/ Tensioner	350	Diesel	1		8	10		
Conductor Splicing Rig	350	Diesel	1		8	10		
Fiber Splicing Lab	300	Diesel	1		5	10		
Spacing Cart	10	Gas	4		8	10		
Backhoe/Front Loader	125	Diesel	2		8	8		
Track Type Dozer	350	Diesel	1		8	8		
Sag Cat w/ 2 winches	350	Diesel	1		8	10		
Lowboy Truck/Trailer	450	Diesel	2		8	10		
Remove Existing Conductor & GW (11) – 500 kV, 220 kV & 66 kV				28	130		14 Miles	
1-Ton Truck, 4x4	300	Diesel	4		130	10		
Manlift/Bucket Truck	350	Diesel	4		130	10		
Boom/Crane Truck	350	Diesel	2		130	10		
Track Type Dozer	350	Diesel	1		26	5		
Sag Cat w/2 Winches	350	Diesel	1		26	5		
V-Groove or Equivalent Rewinder	350	Diesel	1		104	5	6/7/17 – 8/11/17; 5/3/19 – 1/23//20	Transmission/Subtransmission
Truck mounted – Three drum fly-line pulling machines (Equipped with 3/8-inch steel pulling cable)	350	Diesel	1		104	5		
Hardline 30,000 Pound Puller	350	Diesel	1		104	5		
Truck, Semi-Tractor	350	Diesel	2		26	2		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Water Truck	350	Diesel	2		130	6		
Lowboy Truck/Trailer	450	Diesel	4		26	4		
LST Removal (12) – 500kV, 220 kV & 66 kV				12	25		59 LSTs	
1-Ton Truck, 4x4	300	Diesel	2		25	8		
Compressor Trailer	120	Diesel	2		25	10		
Water Truck	350	Diesel	1		25	10	6/9/17 – 11/15/17; 7/15/19 – 4/1/20	
Dump Truck	350	Diesel	1		25	6		Transmission/Subtransmission
R/T Crane (M)	215	Diesel	2		25	5		
R/T Crane (L)	300	Diesel	2		25	7		
Flat Bed Truck/Trailer	400	Diesel	2		25	10		
LST Foundation Removal (13) – 500kV, 220 kV & 66 kV				8	24		59 LSTs	
3/4-Ton Truck, 4x4	275	Gas	2		24	8		
Compressor Trailer	120	Diesel	2		24	10	6/9/17 – 11/15/17; 7/15/19 – 4/1/20	
Water Truck	300	Diesel	1		24	10		Transmission/Subtransmission
Backhoe/Front Loader	350	Diesel	2		24	10		
Dump Truck	350	Diesel	2		24	10		
Excavator	250	Diesel	1		24	10		
TSP Removal (14) – 220 kV & 66 kV				12	4		8 TSP	
3/4-Ton Truck, 4x4	275	Gas	2		4	8	11/15/17-12//29/17; 12/17/19 – 1/15/20; 2/3/20 – 3/6/20	
1-Ton Truck, 4x4	300	Diesel	2		4	8		
Water Truck	350	Diesel	1		4	10		Transmission/Subtransmission
Compressor Trailer	120	Diesel	2		4	10		
R/T Crane (L)	350	Diesel	2		4	7		
TSP Foundation Removal (15) – 220 kV & 66 kV				8	5		9 TSP	
3/4-Ton Truck, 4x4	275	Gas	2		5	8		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Compressor Trailer	120	Diesel	2			10	11/15/17-12//29/17; 12/17/19–3/6/20	Transmission/Subtransmission
Water Truck	300	Diesel	1		5	10		
Backhoe/Front Loader	350	Diesel	2		5	10		
Dump Truck	350	Diesel	2		5	10		
Excavator	250	Diesel	1		5	10		
66 kV Pole Removal (16)				12	20		40 Poles	
1-Ton Truck, 4x4	300	Diesel	2		20	8	8/20/19 – 1/15/20	Transmission/Subtransmission
Compressor Trailer	120	Diesel	1		20	10		
Manlift/Bucket Truck	250	Diesel	2		20	7		
Boom/Crane Truck	350	Diesel	2		20	7		
Flat Bed Pole Truck	400	Diesel	2		20	10		
Install LST Foundations (17)				14	44		24 LSTs	
3/4-Ton Truck, 4x4	275	Gas	2		44	5	6/8/17 – 8/17/17; 4/12/19 – 7/5/19; 1/31/20 – 2/21/20; 11/1/20 – 11/14/20	Transmission/Subtransmission
Boom/Crane Truck	350	Diesel	2		11	7		
Backhoe/Front Loader	200	Diesel	2		33	10		
Auger Truck	500	Diesel	2		33	10		
Water Truck	350	Diesel	2		44	10		
Dump Truck	350	Diesel	4		33	10		
Concrete Truck	425	Diesel	4		11	7		
LST Steel Haul (18)				4	11		23 LSTs	
1-Ton Truck, 4x4	300	Gas	1		11	10	6/16/17 – 10-31/17; 4/17/19 – 4/30/19; 1/17/20 – 4/3/20;	Transmission/Subtransmission
Water Truck	350	Diesel	1		11	10		
R/T Forklift	200	Diesel	2		11	8		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Flat Bed Truck/Trailer	400	Diesel	2		11	10	11/8/20 – 11/11/20	
LST Steel Assembly (19)				20	55		24 LSTs	
3/4-Ton Truck, 4x4	275	Gas	2		55	5	6/29/17 – 11/6/17; 4/24/19 – 5/7/19; 1/24/20 – 4/10/20; 11/29/20 – 12/8/20	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Diesel	2		55	5		
Compressor Trailer	120	Diesel	2		55	7		
R/T Forklift	125	Diesel	2		55	7		
R/T Crane (L)	300	Diesel	2		55	10		
LST Erection (20)				24	55		24 LSTs	
3/4-Ton Truck, 4x4	275	Gas	2		55	8	6/29/17 – 11/6/17; 4/24/19 – 5/7/19; 1/24/20 – 4/10/20; 11/29/20 – 12/8/20	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Diesel	2		55	8		
Water Truck	350	Diesel	2		55	10		
Compressor Trailer	60	Diesel	4		55	7		
R/T Crane (M)	215	Diesel	2		55	7		
R/T Crane (L)	275	Diesel	2		55	7		
Install TSP Foundations (21) – 220 kV & 66 kV				12	46		30 TSPs	
3/4-Ton Truck, 4x4	275	Gas	4		46	5	6/22/17 – 11/15/19	Transmission/Subtransmission
Boom/Crane Truck	350	Diesel	2		16	7		
Backhoe/Front Loader	200	Diesel	2		31	10		
Auger Truck	500	Diesel	2		31	10		
Water Truck	350	Diesel	2		4	10		
Dump Truck	350	Diesel	2		31	10		
Concrete Mixer Truck	425	Diesel	10		16	6		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
TSP Haul (22) – 220 kV & 66 kV				4	16		27 (30) TSPs	
3/4-Ton Truck, 4x4	275	Gas	1		16)	8	7/4/17 – 10/1/18; 4/17/19 – 4/30/19; 1/24/20 – 2/3/20	Transmission/Subtransmission
Water Truck	350	Diesel	1		16)	10		
Boom/Crane Truck	350	Diesel	2		16)	8		
Flat Bed Pole Truck	400	Diesel	2		16)	10		
TSP Assembly (23) – 220 kV & 66 kV				12	10		30 TSPs	
3/4-Ton Truck, 4x4	275	Gas	2		10	6	7/11/17 – 10/8/18; 4/24/19 – 5/7/19; 1/31/20 – 2/10/20	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Diesel	2		10	6		
Water Truck	350	Diesel	1		10	10		
Compressor Trailer	120	Diesel	2		10	6		
Boom/Crane Truck	350	Diesel	2		10	7		
TSP Erection (24) – 220 kV & 66 kV				12	10		30 TSPs	
3/4-Ton Truck, 4x4	275	Gas	2		10	6	7/11/17 – 10/8/18; 4/24/19 – 5/7/19; 1/31/20 – 2/10/20	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Diesel	2		10	6		
Water Truck	350	Diesel	1		10	10		
Compressor Trailer	120	Diesel	2		10	6		
R/T Crane (L)	350	Diesel	2		10	7		
Install/Transfer Conductor (25) – 500 kV, 220 kV & 66 kV				30	309		55 Pulls	
3/4-Ton Truck, 4x4	275	Gas	2		309	10		
1-Ton Truck, 4x4	300	Diesel	2		309	10		
Manlift/Bucket Truck	350	Diesel	2		309	10		
Boom/Crane Truck	350	Diesel	2		309	10		
R/T Crane (M)	215	Diesel	2		155	10		
Wire Truck/Trailer	350	Diesel	1		155	10	10/10/17 –	

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Truck mounted – Three drum fly-line pulling machines (Equipped with 3/8-inch steel pulling cable)	350	Diesel	1		155	10	10/15/18; 5/8/19 – 6/3/19; 12/16/19 – 12/18/19; 4/6/20 – 4/27/20; 12/9/20 – 12/23/20	Transmission/Subtransmission
Static Truck/ Tensioner	350	Diesel	1		116	10		
Conductor Splicing Rig	350	Diesel	1		39	10		
Fiber Splicing Lab	300	Diesel	1			10		
Spacing Cart	10	Gas	4		39	10		
Backhoe/Front Loader	125	Diesel	2		39	8		
Track Type Dozer	350	Diesel	1		39	8		
Sag Cat w/ 2 winches	350	Diesel	1		39	10		
Lowboy Truck/Trailer	450	Diesel	2		39	10		
Hughes 500 F		Jet A	1		15	7		
Fuel, Helicopter Support Truck	300	Diesel	1		15	7		
Shoo-fly Pole Removal (26)				6	4)		7 Poles	
1-Ton Truck, 4x4	300	Diesel	2		4	6	12/6/19 – 12/13/19; 2/3/20 – 3/6/20	Transmission/Subtransmission
Compressor Trailer	60	Diesel	2		4	6		
Water Truck	300	Diesel	1		4	10		
Manlift/Bucket Truck	250	Diesel	2		4	10		
Boom/Crane Truck	350	Diesel	2		4	7		
Flat Bed Truck/ Trailer	400	Diesel	2		4	6		
Remove Shoo-fly Conductor & GW (27)				30	20		1 Circuit Miles	
1-Ton Truck, 4x4	300	Diesel	2		20	10	12/6/19 – 12/13/19; 2/3/20 –	Transmission/Subtransmission
Manlift/Bucket Truck	250	Diesel	2		20	10		
Sleeving Truck	300	Diesel	2		20	5		
Boom/Crane Truck	350	Diesel	4		20	5		
Bull Wheel Puller	500	Diesel	2		20	5		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Truck, Semi-Tractor	350	Diesel	2		20	2	3/6/20	
Hydraulic Rewind Puller	300	Diesel	2		20	5		
Water Truck	350	Diesel	1		20	10		
Lowboy Truck/Trailer	450	Diesel	2		20	10		
Guard Structure Removal (28)				6	18		46 Structures	
3/4-Ton Truck, 4x4	275	Gas	2		18	7	7/27/17 – 11/17/17; 5/4/19 – 6/6/19; 10/5/19 – 12/20/19; 4/7/20 – 5/7/20; 12/24/20 – 12/28/20	Transmission/Subtransmission
1-Ton Truck, 4x4	300	Gas	8		18	7		
Compressor Trailer	120	Diesel	2		18	7		
Water Truck	300	Diesel	1		18	10		
Manlift/Bucket Truck	350	Diesel	2		18	5		
Boom/Crane Truck	500	Diesel	2		18	10		
Extendable Flat Bed Pole Truck	400	Diesel	2		18	7		
Vault Installation (29)				16	58		28 Vaults	
1-Ton Truck, 4x4	300	Diesel	2		58	5	7/17/17 – 10/1/18	Transmission/Subtransmission
Backhoe/Front Loader	125	Diesel	2		28	8		
Excavator	250	Diesel	2		28	7		
Dump Truck	350	Diesel	2		28	10		
Water Truck	300	Diesel	1		58	10		
Crane (L)	500	Diesel	1		28	7		
Concrete Mixer Truck	350	Diesel	10		28	3		
Lowboy Truck/Trailer	450	Diesel	2		28	5		
Flat Bed Truck/Trailer	400	Diesel	2		28	5		
Duct Bank Installation (30)				16	132		5 Miles	

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
1-Ton Truck, 4x4	300	Diesel	2		132	5		
Compressor Trailer	120	Diesel	2		116	5		
Backhoe/Front Loader	125	Diesel	2		132	7		
Dump Truck	350	Diesel	2		116	7		
Pipe Truck/Trailer	275	Diesel	1		116	7	7/24/17 – 10/8/18	Transmission/Subtransmission
Water Truck	300	Diesel	1		132	10		
Concrete Mixer Truck	350	Diesel	10		132	4		
Flat Bed Truck/Trailer	400	Diesel	1		132	5		
Lowboy Truck/Trailer	450	Diesel	1		132	5		
Concrete Saw	35	Gas	2		5	8		
Install Underground Cable (31)				16	70		25 Miles	
1-Ton Truck, 4x4	300	Diesel	2		70	5		
Manlift/Bucket Truck	250	Diesel	4		70	5		
Boom/Crane Truck	350	Diesel	1		28	7		
Water Truck	300	Diesel	1		70	10	7/31/17 – 10/15/18	Transmission/Subtransmission
Pipe Truck/Trailer	275	Diesel	1		70	7		
Wire Truck/Trailer	350	Diesel	1		70	5		
Puller	350	Diesel	2		70	5		
Flat Bed Truck/Trailer	400	Diesel	2		70	5		
Splice Underground Cable (32)				8	81		162 Splices	
1-Ton Truck, 4x4	300	Diesel	2		81	10	8/7/17 – 10/22/18	Transmission/Subtransmission
Splice Truck	300	Diesel	2		81	10		
Restoration (33)				7			Unknown Miles	
1-Ton Truck, 4x4	300	Diesel	2			4		
Backhoe/Front Loader	125	Diesel	2			7		

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Motor Grader	250	Diesel	2			7		Transmission/Subtransmission
Water Truck	300	Diesel	2			10		
Drum Type Compactor	100	Diesel	2			7		
Lowboy Truck/Trailer	450	Diesel	1			3		
Civil Installation Trenching				10				
Water Truck		Diesel	1		30	10		
Backhoe		Diesel	2		30	10		
Concrete Truck		Diesel	1		30	10		
Bob Tail Truck		Diesel	2		30	10	5/1/17 - 12/31/19	Telecommunications OSP
10 Wheel Dump Truck		Diesel	2		30	10		
Pickup		Gasoline	2		30	10		
Compressor Trailer		Gasoline	1		30	10		
Civil Installation Directional Drilling				3				
Directional Drill		Diesel	1		3	10		
Semi Crew Truck		Diesel	1		3	10	1/1/18 - 12/31/19	Telecommunications OSP
Pickup Truck		Gasoline	1		3	10		
Vacuum Trailer		Gasoline	1		3	10		
Paving Restoration				4				
10 Wheel Dump Truck		Diesel	1		5	10		
Paving Roller		Diesel	1		5	10	5/15/17 - 12/31/19	Telecommunications OSP
Pickup Truck		Gasoline	1		5	10		
Fiber Optic Cable Installation				10				
Pick up Truck		Diesel	2		250	10		
1 Ton Truck		Diesel	2		250	10	5/15/17 - 12/31/20	Telecommunications OSP
Manlift/Bucket Truck		Diesel	2		250	10		
Fiber Optic/Copper Cable Removal				10				

APPENDIX C: MESA 500 kV LOOP-IN project
CONSTRUCTION EQUIPMENT AND WORKFORCE ESTIMATES BY ACTIVITY
LOOP-IN single-Circuit 500 kV T/L, RELOCATE multiple double-circuit 220 kv t/l, AND RELOCATE multiple 66 KV T/L

WORK ACTIVITY				ACTIVITY PRODUCTION				PROJECT COMPONENT
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Total Production	Substation, Transmission/ Subtransmission, or Telecom OSP
Pick up Truck		Diesel	2		80	10	5/20/17 - 12/31/20	Telecommunications OSP
1 Ton Truck		Diesel	2		80	10		
Manlift/Bucket Truck		Diesel	2		80	10		
Splicing & Testing				5				
Pick up Truck		Diesel	2		80	10	6/31/16 - 12/31/20	Telecommunications OSP
Splice Labs		Diesel	2		80	10		

Appendix D

Cultural Resources Management Plan for the Mesa Substation Project

Cultural Resources Management Plan for the Mesa Substation Project

Prepared for:

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Under contract to:

Insignia Environmental

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PN 24000.02
April 2017

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STATEMENT OF CONFIDENTIALITY

Confidential Appendix A identifies the locations of historic resources. Disclosure of this information to the public may be in violation of both federal and state laws. Applicable U.S. laws include, but may not be limited to, Section 304 of the National Historic Preservation Act (16 USC 470w-3) and the Archaeological Resources Protection Act (16 USC 470hh). California state laws that apply include, but may not be limited to, Government Code §§6250 et seq. and 6254 et seq. Furthermore, disclosure of site location information to individuals other than those meeting the U.S. Secretary of the Interior's professional standards or California State Personnel Board criteria for Associate State Archaeologist or State Historian II violates the California Office of Historic Preservation's records access policy.

1.0 INTRODUCTION

This Cultural Resource Management Plan (CRMP) describes the measures that Southern California Edison Company (SCE) will implement to minimize cultural resource impacts during construction of the Mesa 500-kilovolt (kV) Substation Project (Project). The proposed Project area is located primarily in the City of Monterey Park, with additional components in Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, Pasadena, Industry, Santa Clarita and in portions of unincorporated Los Angeles County. The Project includes the following five major components:

- Demolition of the existing Mesa Substation and construction of the proposed Mesa Substation within the City of Monterey Park
- Removal, relocation, modification, and/or construction of transmission, subtransmission, distribution, and telecommunications structures within SCE's right-of-way, franchise areas, or fee-owned property 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 line from overhead to underground between three street lights within the City of Bell Gardens
- Installation of a temporary 220-kV line loop-in and telecommunications lines at Goodrich Substation within the City of Pasadena
- Additional minor modifications at 27 existing satellite substations

This CRMP describes the procedures that will be followed prior to and during construction to ensure compliance with mitigation measures MM CR-1, MM CR-2, MM CR-3, and MM CR-6 (see Section 3 below).

1.1 AUTHORITY

The following CRMP defines the process to be followed by SCE for the identification and management of cultural resources in the Project area during construction. The process and associated measures herein were developed with reference to the stipulations and Mitigation Measures (MM) included in the Cultural Resources (CR) section of the Project's Final Environmental Impact Report (FEIR) and Appendix H of the FEIR and will be used to guide avoidance or mitigation of cultural resources, and if necessary, sampling, data recovery and recording, laboratory analysis, and report preparation.

1.2 PROJECT AREA

The proposed Project is located in Los Angeles County, California, primarily in the City of Monterey Park where the existing 220/66/16-kV Mesa Substation would be demolished and the new 500/220/66/16-kV Mesa Substation would be constructed. Other major components will be located within portions of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, Pasadena, Industry, Santa Clarita, and in portions of unincorporated Los Angeles County.

2.0 CULTURAL RESOURCES INVENTORY

Seven cultural resources studies were conducted for the Project, and all survey efforts were consistent with the Secretary of the Interior's Standards and Guidelines for Identification (48 FR 44720-23). The initial survey conducted by ASM in 2014 documented the primary component of the Project (Mesa Substation) in the report *Cultural Resources Inventory of the Southern California Edison Company Mesa Substation 500 Kilovolt Project, Los Angeles County, California* (Williams et al. 2014). Four studies of the connecting historic-era infrastructure were completed in 2014 and 2015; none of the previously recorded historic era resources documented in this area were determined to be eligible for the National Register of Historic Resources (NRHP) or California Register of Historical Resources (CRHR) (Chiang and Tinsley Becker 2014; DeBiase and Tinsley Becker 2015; Tinsley Becker et al. 2015; Williams 2014). A supplemental cultural resources inventory was then conducted to address several modifications to existing facilities. The findings of that study are documented in *Cultural Resources Inventory of Five Proposed Modifications to the Southern California Edison Company Mesa Substation 500 Kilovolt Project, Los Angeles County, California* (Williams 2015a). A third cultural resources inventory was made to inventory any resources that may be present at two proposed staging yards. The results of all seven studies were incorporated into the FEIR for the Project (CPUC 2016).

2.1 CULTURAL RESOURCES WITHIN THE PROJECT AREA

The cultural resources studies conducted for the Project identified 68 cultural resources within a 0.5-mile radius of the proposed Project facilities. Of these 68 resources, 35 are located within the Project area (see Williams et al. 2014; Williams 2015a, 2015b). Project maps, including the cultural resources locations, are included in Confidential Appendix A. The 35 resources have mixed eligibility statuses: six were previously determined not eligible for inclusion in the CRHR/NRHP, one was previously recommended eligible for inclusion in the NRHP and as a Local Landmark, two are currently listed as California Historical Landmarks (HRI #090180 and HRI #089715), and the remainder have not previously been evaluated for inclusion or were recommended not eligible for inclusion in the CRHR, NRHP, or Local Listing. The portion of P-19-186889 within the Project area, the historic era debris and concrete structure, was evaluated in 2017 and recommended not eligible to the CRHR or the NRHP (Davis 2017). The cultural resources inventory for this project as well as the FEIR discuss these resources in detail and provide recommendations for their avoidance and/or treatment during construction. See Table 1 for a summary of resources recorded in the project area.

Table 1. Cultural Resources Recorded in the Project Area

Trinomial or Primary No.	Period and Reference	Site Description	CRHR/ NRHP Status	Possible Impacts	Management Measure	DPR Form Updated
P-19-003813	Historic-Era; Fulton and Fulton (2008)	Montebello Oil Field	Not Evaluated	None	No further resource management necessary	No
P-19-178617	Historic-Era; Shoeni (1972)	Juan Matias Sanchez Adobe	Listed in CRHR	None	No further resource management necessary	No
P-19-186540	Historic-Era; Davis (1959)	Mission Vieja Plaque	Listed in CRHR	None	No further resource management necessary	No
P-19-186889	Historic-Era; Messick (2003); Tsunoda; (2008) Davis (2017)	Whittier Narrows Dam Recreation	Recommended Not Eligible	None	No further resource management necessary	No

Trinomial or Primary No.	Period and Reference	Site Description	CRHR/ NRHP Status	Possible Impacts	Management Measure	DPR Form Updated
P-19-186876	Historic-Era; Tinsley Becker, Wendy (2010)	Antelope–Mesa 220-kV Transmission Line	Not Eligible	None	No further resource management necessary	No
P-19-190334	Historic-Era; Roberts and Brock (1987); PAR (2012)	Temple School	Recommended Eligible	None	No further resource management necessary	No
P-19-190502	Historic-Era; Tinsley Becker, Wendy (2010)	Mesa–Anita–Eaton 66-kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
P-19-190503	Historic-Era; Tinsley Becker, Wendy (2010)	Mesa–Ravendale–Rush 66-kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
P-19-190504	Historic-Era; Tinsley Becker, Wendy (2010)	Rio Hondo–Amador–Jose–Mesa 66-kV Subtransmission Line*	Not Eligible	None	No further resource management necessary	No
P-19-190505	Historic-Era; Tinsley Becker, Wendy (2010)	Walnut–Mesa 220-kV Transmission Line*	Not Eligible	None	No further resource management necessary	No
P-19-190508	Historic-Era; Tinsley Becker, Wendy (2010)	Walnut–Hillgen–Industry–Mesa–Reno 66-kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Rush No. 2 66 kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Narrows 66-kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Center–Mesa 220-kV Subtransmission Line	Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Eagle Rock–Mesa 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Laguna Bell–Narrows 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Newmark–Ramona 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No

Trinomial or Primary No.	Period and Reference	Site Description	CRHR/ NRHP Status	Possible Impacts	Management Measure	DPR Form Updated
-	Historic-Era; Williams (2014)	Mesa–Repetto–Wabash 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Newmark No. 1 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Newmark No. 2 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Rosemead No. 1 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Rosemead No. 2 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Rush No. 3 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–San Gabriel 66-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Goodrich–Laguna Bell 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Laguna Bell–Rio Hondo 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Lighthipe–Mesa 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Redondo 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Mesa–Vincent 220-kV Subtransmission Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Brookline 16-kV Distribution Line	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams (2014)	Highcliff 16-kV Distribution Line	Recommended Not Eligible	None	No further resource management necessary	No

Trinomial or Primary No.	Period and Reference	Site Description	CRHR/ NRHP Status	Possible Impacts	Management Measure	DPR Form Updated
-	Historic-Era; Tinsley Becker, Wendy (2010)	Mesa Substation Complex	Recommended Not Eligible	None	No further resource management necessary	No
-	Historic-Era; Williams et al. (2014)	440 Potrero Grande Drive Building A	Recommended Not Eligible	None	No further resource management necessary	Yes
-	Historic-Era; Williams et al. (2014)	440 Potrero Grande Drive Building B	Recommended Not Eligible	None	No further resource management necessary	Yes
-	Historic-Era; Williams et al. (2014)	440 Potrero Grande Drive Building C	Recommended Not Eligible	None	No further resource management necessary	Yes

3.0 CULTURAL RESOURCES MANAGEMENT MEASURES

The objective of the Plan is to ensure that the project does not adversely affect historical resources. Two known unevaluated historic-era resources will be protected from impacts during construction through the installation of flagging and signage. All SCE, contractor, and subcontractor personnel will receive training on appropriate work practices for cultural resources. Procedure and direction are outlined to respond if construction activity results in discovery of a previously unknown cultural resource. To protect unanticipated human remains from construction impacts, compliance with California law will direct all responses in the event that human remains or suspected human remains are discovered.

3.1 MITIGATION MEASURES

Note, the cultural resources study conducted for the staging yards (Williams 2015b) and FEIR discuss historic-era resource SAY-S-01 (the KRLA radio station remains). The proposed staging yard where this resource was located has been dropped from the Project so it will not be addressed herein. The historic-era debris and concrete structure at site P-19-186889 was evaluated and recommended not eligible for the California Register of Historical Resources, National Register of Historic Places, or local registers (Davis 2017). However, per the FEIR, the resource and a 10-ft. buffer around the resource must still be flagged for avoidance during construction.

This plan requires SCE to adhere to the following:

3.1.1 MM CR-1: Flag and Avoid Known Unevaluated Historic Sites

Prior to commencement of any construction or construction-related activities within 50 feet (ft.) of the mapped boundaries of (1) the historic-era debris and concrete structure at site P-19-186889 and (2) the concrete footings and shack at site SAY-S-01, a qualified California Public Utilities Commission (CPUC)-approved archaeologist shall erect flagging to create a 50-ft. buffer around the resource. Flagging shall be in a bright, easily visible color, and signs shall be posted at the perimeter of the flagged areas on all sides to indicate that construction equipment, materials, and personnel shall stay out of the flagged areas. Flagging and signage shall stay in place until all construction activities within 50 ft. of the resources have been completed.

3.1.2 MM CR-2: Worker Training for Cultural and Paleontological Resources

Prior to commencement of any project-related construction activities, all SCE, contractor, and subcontractor project personnel shall receive training regarding:

- Appropriate work practices necessary to effectively implement the APMs and mitigation measures and to comply with the applicable environmental laws and regulations.
- The potential for exposing subsurface cultural resources and paleontological resources.
- How to recognize possible buried resources.

This training shall include a presentation of:

- Procedures to be followed upon discovery or suspected discovery of historic or archaeological materials, including Native American remains and their treatment.
- Procedures to be followed upon discovery or suspected discovery of paleontological resources.
- Actions that may be taken in the case of violation of applicable laws.

3.1.3 MM CR-3: Previously Unidentified Resources

If a previously unknown cultural resource is discovered during project construction activities, work shall be halted within 100 ft. of the resource, and protective barriers shall be installed along with signage identifying the area as an "environmentally sensitive area." Entry into the area shall be limited to authorized personnel, and the CPUC-approved cultural resources specialist/qualified archaeologist, SCE, and the CPUC shall be notified immediately.

Preservation in place (i.e., avoidance) is the preferred method of mitigation for impacts on cultural resources and shall be required to mitigate impacts to previously undiscovered resources unless the CPUC-approved cultural resources specialist/qualified archaeologist and SCE determine that another method would provide superior mitigation of impacts to the resource. If the resource can be completely avoided, no additional mitigation is necessary. If the resource cannot be completely avoided, the CPUC-approved cultural resources specialist/qualified archaeologist and SCE shall follow the procedures delineated below for resources where it is not known whether the resource is historical. If an unanticipated resource is avoided, it shall nonetheless be recorded on Department of Parks and Recreation (DPR) 523 forms, which shall be filed at the South Central Coast Information Center.

Determination if a resource is an historical resource. The CPUC-approved cultural resource specialist/qualified archaeologist and SCE, in consultation with the CPUC, shall determine if there is a potential for the resource to be a historical resource. If there is no potential for the resource to qualify as a historical resource, work shall resume after CPUC concurrence. If there is a potential for the resource to be a historical resource, the qualified archaeologist and SCE shall prepare an Evaluation Plan.

Evaluation Plan. The resource-specific Evaluation Plan shall detail the procedures to be used to determine if the discovery is a historical resource. The Evaluation Plan shall include sufficient discussion of background and context to allow the evaluation of the resource against the historical resource criteria. It shall include a description of procedures to be used in the gathering of information to allow the evaluation. These techniques may include (but are not limited to): excavation, written documentation, interviews, and/or photography. For archaeological resource testing, the Evaluation Plan shall describe the archaeological testing procedures, including, but not limited to surface collection (if surface artifacts are discovered), test excavations (including type, number, and location of test pits and/or trenches), analysis methods, and reporting procedure. The Evaluation Plan shall be submitted to CPUC for review. Once approved, the Evaluation Plan shall be implemented in the field. The report resulting from this work shall include evaluation of the discovery, based on the significance criteria set forth in the Evaluation Plan, indicating if it is a historical resource. If the discovery is not found to be a historical resource, and CPUC concurs with that determination, protective barriers may be removed, and work may proceed in the area of the discovery. If the discovery is determined to be a historical resource, SCE shall prepare a Data Recovery Plan.

Data Recovery Plan. Data Recovery Plans for historical resources that cannot be fully avoided shall be prepared in accordance with California Environmental Quality Act (CEQA) Guidelines §15126.4(b)(3)(C) and Public Resources Code (PRC) §21083.2, as applicable. The Data Recovery Plan shall outline how the recovery of data from the resource will mitigate impacts to that resource to below a level of significance. The Data Recovery Plan shall describe the level of effort including numbers and kinds of excavation units to be dug, excavation procedures, laboratory methods, samples (e.g., pollen, sediment, as appropriate) to be collected and analyzed, analysis techniques that will yield information relevant to the aspects of the site that make it a historical resource, and reporting procedure. This plan shall be submitted to the CPUC for review and approval. Once approved, the applicant shall implement the approved plan. Once the data recovery field work is complete, a Data Recovery Field Memo shall be prepared.

Data Recovery Field Memo. Following implementation of the Data Recovery Plan, the Data Recovery Field Memo shall be prepared. The Data Recovery Field Memo shall briefly describe the data recovery procedures in the field and summarize (at a field catalog level) the materials recovery. The Data Recovery Field Memo shall also identify the number and kind of samples recovered that are appropriate for special analyses, including radiocarbon dating, obsidian sourcing, pollen analysis, microbotanical analysis, and others, as applicable. The Data Recovery Field Memo shall be submitted to CPUC for review and approval. Once the Data Recovery Field Memo has been approved, protective barriers may be removed, and work may proceed in the area of the discovery. A Data Recovery Report shall then be prepared.

Data Recovery Report. Within 90 days of submittal of the Data Recovery Field Memo, a Data Recovery Report shall be prepared presenting the results of the data recovery program, including a description of the field methods, location and size of excavation units, analysis of materials recovered (including results of any special analyses conducted), and conclusions drawn from the work. The Data Recovery Report shall also indicate where artifacts, samples, and documentation resulting from the data recovery program will be curated. The curation facility shall meet the requirements of 36 Code of Federal Regulations (CFR) 79. The Data Recovery Report shall be submitted to the CPUC for review and approval. Once approved, the Data Recovery Report shall be filed with the South Central Coast Information Center. All impacted known resources and all unanticipated resources shall be recorded on DPR 523 forms that shall be filed at the South Central Coast Information Center with the Data Recovery Report.

3.1.4 MM CR-6: Unanticipated Discovery of Human Remains

In the event that human remains or suspected human remains are identified, SCE shall comply with California law, including, but not limited to, the following provisions: CEQA Guidelines §15064.5(e); PRC §§5097.94, 5097.98, and 5097.99; and California Health and Safety Code §7050.5. These laws require Native American consultation for Native American burial sites.

The area where the remains are identified shall be flagged off, and all construction activities within 165 ft. (50 meters [m]) of the find shall immediately cease. The CPUC, the CPUC-approved cultural resources specialist/archaeologist, SCE, and any other appropriate agency shall be immediately notified, and the cultural resources specialist/archaeologist shall examine the find. If the cultural resources specialist/archaeologist determines that there may be human remains, SCE shall immediately contact the Medical Examiner at the Los Angeles County Coroner's office. The Medical Examiner has two working days to examine the remains after being notified by SCE. If the Medical Examiner believes the remains are Native American, he/she shall notify the Native American Heritage Commission (NAHC) within 24 hours.

The NAHC will immediately notify the person it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the area of the property shall be secured from further disturbance. If there are disputes between the landowners and the MLD, the NAHC shall mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative shall reinter the remains and associated grave goods and funerary objects in an area of the property secure from further disturbance. The location of any reburial of Native American human remains shall not be disclosed to the public and shall not be governed by public disclosure requirements of the California Public Records Act, California Government Code §6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code §6254(r).

3.2 WORKER TRAINING

All construction personnel and monitors who are not trained archaeologists will be trained in the recognition of possible buried cultural remains and protection of all cultural resources (see MM CR-2). The training will include recognition of prehistoric and historic-era resources prior to the initiation of construction or ground-disturbing activities and during construction. SCE will design a complete training program for all construction personnel. Training will inform all construction personnel of the procedures to be followed upon the discovery of archaeological materials, including burials. Training will inform all construction personnel that cultural resources must be avoided and that all travel and construction activity must be confined to designated roads and areas. Qualified non-SCE persons may conduct actual training sessions.

All personnel will be instructed that unauthorized collection or disturbance of artifacts or other cultural materials by SCE, their representatives, or employees will not be allowed. Violators will be subject to prosecution under the appropriate state and federal laws, and violations will be grounds for removal from the Project. Unauthorized collection or disturbance of any cultural resources may constitute grounds for the issuance of a stop-work order. Supervisors will also be briefed on the consequences of intentional or inadvertent damage to cultural resources. Supervisory personnel will enforce restrictions on collection or disturbance of artifacts or other cultural resources.

All personnel will be trained on notification procedures in the event of an unanticipated discovery or impact/damage to any cultural resource. Personnel will be instructed that upon discovery of the potential for buried cultural materials or damage to cultural resources, work in the immediate area of the find will be diverted and SCE's archaeologist notified. Once the find has been inspected and a preliminary assessment made, SCE's archaeologist will consult with the CPUC to make the necessary plans for evaluation and treatment of the find(s) or mitigation of adverse impacts to cultural resources.

SCE will maintain a list of construction personnel who have completed the cultural resources identification training prior to start of construction, and will update this list as required when new personnel start work.

3.3 AVOIDING KNOWN CULTURAL RESOURCES

Impacts to known cultural resources, including those encountered during additional cultural resources surveys, will be avoided or minimized wherever appropriate regardless of their CRHR eligibility statuses. Examples of complete avoidance include, but are not limited to:

1. Relocating proposed new structures and related construction areas outside resource boundaries.
2. Construction of all support work areas outside resource boundaries.
3. Flagging resource boundaries for avoidance.
4. Preconstruction designation of turnaround areas and access routes when work is conducted in proximity to cultural resources.

3.4 PROTECTION OF HUMAN REMAINS

SCE shall ensure that any human remains encountered during the course of the Project are treated in a respectful manner and consistent with applicable laws (see MM CR-6). If human remains are uncovered during Project construction, SCE and/or its contractors shall immediately halt all work within 165-ft. (50 meters) of the find, and SCE's archaeologist or cultural resources consultant shall contact the county coroner to evaluate the remains and shall follow the procedures and protocols set forth in CEQA Guidelines §15064.5(e)(1). If the county coroner determines that the remains are Native American, SCE and/or its contractors shall contact the NAHC, in accordance with Health and Safety Code §7050.5, subdivision (c), and Public Resources Code §5097.98 (as amended by AB 2641). Per Public Resources Code §5097.98, SCE shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological

standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the SCE Environmental Project Manager and/or its cultural resources contractor has discussed and conferred, as prescribed in this section (PRC §5097.98), with the most likely descendants (MLD) regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

If the newly discovered human remains can be avoided, no further impacts will occur, and consultation between SCE, the CPUC, and the MLD, has resulted in recommendations for treatment of the remains then work may continue. If the human remains cannot be avoided and may be subject to further impacts, SCE must consult with the MLD and the CPUC, and any construction affecting the remains will not resume until SCE has received a Notice to Proceed from the CPUC.

3.5 UNANTICIPATED CULTURAL RESOURCES DISCOVERY PLAN

If previously unidentified archaeological or historic resources are discovered during construction of the Project, work within 100 ft. of the discovery will stop immediately, and the cross-trained paleontologist and/or construction personnel monitoring the discovery will establish an appropriate buffer area to prevent further impacts on the resource. Appropriate personnel will notify the SCE Environmental Project Manager or his/her representative immediately. It is the SCE Environmental Project Manager's responsibility to determine whether there should be a general work halting at that location until an on-site inspection of resources can be completed, or whether work can continue. Once the communication has been established, SCE in coordination with its consultant archaeological lead archaeologist will determine a course of action within one hour and then implement appropriate measures to protect any find from further impacts. SCE will notify CPUC within 24 hours of any find and provide information regarding the location and nature of the discovery and steps taken by SCE to protect the find (MM CR-3). The SCE Environmental Project Manager and archaeological consultant will work together to formulate an adequate response to any modifications in construction. Until the appropriate response is resolved, the area with the find can be recorded, mapped, and stabilized by the consulting archaeologist.

If the newly discovered cultural resource can be avoided and no further impacts will occur, the resource will be documented and no further effort will be required. If the resource cannot be avoided and may be subject to further impacts, SCE will take the necessary steps to work with SCE's consultant lead archaeologist to evaluate the significance of the resource based on eligibility for the CRHR and implement appropriate measures. Construction affecting the resource will not resume until SCE has received a Notice to Proceed from the CPUC.

3.6 INADVERTENT IMPACTS TO CULTURAL RESOURCES

Although it is the goal of SCE to protect known cultural resources from Project-related impacts to the extent possible, circumstances may arise when construction or other Project-related activities cause inadvertent impacts to cultural resources (see MM 4.5-1). The term "impacts" as used in this plan means the intentional or unintentional destruction of, damage to, or dislocation of in situ cultural resources or Native American human remains and associated grave goods as a result of Project-related activities.

The discovery of and assessment of impacts on previously undiscovered resources is addressed under "Unanticipated Cultural Resource Discovery Plan" (see Section 3.5). The discovery of and assessment of impacts on previously undiscovered Native American human remains and associated grave goods must follow Public Resources Code (PRC) 5097.98 and is outlined in Section 3.4 Inadvertent impacts may occur during Project–related activities if procedures for the protection of resources are not followed. Failure to follow protection measures may include but is not limited to (1) trespassing into posted culturally sensitive

areas and (2) damage to a cultural resource not posted as such. SCE will respond to inadvertent impacts by following the procedures below.

3.6.1 Reporting Inadvertent Impacts

Within 24 hours of discovering a Project-related inadvertent impact on a cultural resource, SCE will provide to the CPUC a written account that:

1. describes the resource affected;
2. defines in detail the nature and extent of the impact on the resource including photographs and maps as appropriate;
3. identifies the Project activity that resulted in the impact, when the impact occurred, and whether measures were in place to prevent the impact;
4. describes measures taken to protect the resources from further impacts;
5. provides an assessment of whether the impacts have affected the significance of the resource; and
6. defines how SCE proposes to proceed to address the impact.

3.6.2 Responsible Agencies

Resolution of impacts on cultural resources will be determined through consultation between SCE and CPUC. SCE will consult the CPUC regarding the resolution of impacts to all cultural resources.

4.0 COMMUNICATION PROTOCOLS

Communication for reporting inadvertent discoveries and/or impacts will follow a formal chain of communication. Once a new cultural resource find is made (including possible human remains), work will cease within 100 ft. of the location for a cultural resources discovery and 165 ft. of the location for the discovery of possible Native American human remains and associated grave goods.

For the inadvertent discovery of cultural resources, if a cultural resource monitor is not present on site, the appropriate construction personnel will notify the environmental lead immediately to coordinate to have one assess the find. If a new resource is identified by the CPUC-approved cultural resources monitor (in consultation with the CPUC-approved Cultural Resources Lead Archaeologists); the area and a 100-ft. buffer will be flagged and secured. The CPUC-approved Cultural Resources Lead will notify the Environmental Project Manager who will contact the SCE Project Manager and the CPUC immediately. The SCE Environmental Project Manager will be responsible for contacting the SCE Cultural Resources Specialist, if deemed necessary. All issues will be resolved at the lowest possible level and move up the hierarchy only as it becomes necessary or as determined by the CPUC and SCE Environmental Project Manager.

The contact chain-of-command applies to the discovery of human remains in the Project area as well. If possible Native American human remains and associated grave good are identified during monitoring the CPUC-approved cultural resources monitor (in consultation with the CPUC-approved Cultural Resources Lead Archaeologists) will halt all work within 165 ft. of the discovery, and the CPUC-approved Cultural Resources Lead will notify the Environmental Project Manager who will contact the SCE Project Manager and the CPUC immediately. The CPUC will contact the Los Angeles County Medical Examiner, and after making a determination regarding the remains the Medical Examiner will contact the NAHC.

Day-to-day communication channels are somewhat more flexible than the official chain-of-command, and will correspond to the level of urgency and availability of personnel during particular field activities. If field monitors are present, they will report to the Cultural Resources Lead Archaeologist for the Project. The Cultural Resources Lead Archaeologist is responsible for assuring that appropriate activities are being monitored, as required. Currently there are no requirements for cultural resources monitoring on the Project. The Environmental Lead will be the point-of-contact for SCE personnel. When a cultural resources monitor is not present, construction personnel will report directly to the Environmental Lead.

Communications between the cultural resources consultant and Environmental Lead will be maintained throughout construction activities in order to determine if cultural resources monitors may be required and whether or not cultural materials or features are identified during construction.

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APPENDIX

APPENDIX A

Project Area Maps – CONFIDENTIAL

Appendix E

Paleontological Resources Management Plan for the Southern California Edison Mesa 500 Kilovolt Substation Project

PALEO SOLUTIONS
Paleontological and Archaeological Compliance and Consulting Services

PALEONTOLOGICAL RESOURCES MANAGEMENT PLAN FOR THE SOUTHERN CALIFORNIA EDISON MESA 500 KILOVOLT SUBSTATION PROJECT LOS ANGELES COUNTY, CALIFORNIA

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February 2017

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Table 1 **SCE Mesa 500 kV Substation Project Mitigation Measures**

Appendix A **Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources**

Appendix B **Potential Fossil Yield Classification**

Attachment 1 (Figure 1) **Project Location Map**

Attachment 2 (Figure 2) **Project Geology Maps**

Attachment 3 **Resumes**

SECTION 1

INTRODUCTION

1.1 PROJECT DESCRIPTION

This Paleontological Resources Management Plan (PRMP) describes the measures that Southern California Edison Company (SCE) will implement to minimize paleontological resource impacts during construction of the Mesa 500 kilovolt (kV) Substation Project (Project). The Project area encompasses approximately 283.2 acres and is located primarily in the city of Monterey Park, with additional components in Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, and Pasadena, and in portions of unincorporated Los Angeles County (Figure 1). The Project includes the following five major components:

- Demolition of the existing Mesa Substation and construction of the proposed Mesa Substation within the City of Monterey Park
- Removal, relocation, modification, and/or construction of transmission, subtransmission, distribution, and telecommunications structures within SCE's right-of-way, franchise areas, or fee-owned property 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 line from overhead to underground between three street lights within the City of Bell Gardens
- Installation of a temporary 220 kV line loop-in and telecommunications lines at Goodrich Substation within the City of Pasadena
- Additional minor modifications at 27 existing satellite substations

This PRMP was prepared in accordance with Applicant Proposed Measure (APM) CUL-01 as described in the Project's Final Environmental Impact Report (FEIR) issued by the California Public Utilities Commission (CPUC). This PRMP also describes the procedures that will be followed prior to, during, and after construction to ensure compliance with Mitigation Measures (MMs) CR-2, CR-4, and CR-5 (Table 1).

TABLE 1. SCE Mesa 500 kV Substation Project Mitigation Measures

Mitigation Measure	Description*
APM-CUL-01	**Paleontological Resources Management Plan** A Paleontological Resources Management Plan would be developed for construction within areas that have been identified as having a moderate and high sensitivity for paleontological resources. The Paleontological Resources Management Plan would be prepared by a professional paleontologist in accordance with the recommendations of the Society of Vertebrate Paleontology.
MM CR-2	**Worker Training for Cultural and Paleontological Resources** Prior to commencement of any project-related construction activities, all SCE, contractor, and subcontractor project personnel shall receive training regarding: • Appropriate work practices necessary to effectively implement the APMs and mitigation measures and to comply with the applicable environmental laws and regulations. • The potential for exposing subsurface cultural resources and paleontological resources. • How to recognize possible buried resources. This training shall include a presentation of: • Procedures to be followed upon discovery or suspected discovery of paleontological resources. • Actions that may be taken in the case of violation of applicable laws.
MM CR-4	**Paleontological Resources Monitoring** Prior to the start of construction, the applicant shall retain a qualified paleontologist. The qualified paleontologist shall be approved by the CPUC and shall monitor all ground-disturbing activities that take place within areas that have a moderate to high potential to contain paleontological resources, consistent with designations shown in Table 4.4-7 [of the FEIR]. The Paleontological Resources Management Plan (APM-CUL-01) shall show a map of areas requiring monitoring consistent with Table 4.4-7 [of the FEIR]. The paleontological monitor shall have the authority to halt construction in the vicinity of any potential paleontological resource finds to begin implementation of MM CR-5.
MM CR-5	**Follow Paleontological Resource Discovery Protocol** In the case that a previously unknown paleontological resource is discovered during construction activities, all work within 15 meters of the resource shall be stopped, and the CPUC-approved paleontologist shall determine, after consulting with SCE, whether the resource can be avoided. If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, the paleontologist shall determine whether the resource is unique under Part V of CEQA Guidelines Appendix G. A paleontological resource shall be considered unique if it meets the definition of a significant paleontological resource under the 2010 Society of Vertebrate Paleontology *Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources* definition: > Significant paleontological resources are fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plan, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years). Substantiation of the uniqueness conclusion shall be provided to the CPUC for review and approval. If the resource is determined not to be unique, work may commence in the area. If the resource is unique, then work shall remain stopped, and the approved paleontologist shall consult with the applicant and the CPUC regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation in place, i.e., avoidance, is the preferred method of mitigation for impacts to paleontological resources and shall be required to mitigate impacts to previously undiscovered resources unless the CPUC approved paleontologist determines that another method would provide superior mitigation of impacts to the resource. Other methods include ensuring that the fossils are recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. Methods of recovery, testing, and evaluation shall adhere to current professional standards for recovery, preparation, identification, analysis, and curation, such as the 2010 Society of Vertebrate Paleontology *Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources*. Work can commence following recovery and CPUC approval.

*Mitigation Measures as stated in the final EIR (Ecology and Environment, 2016) with minor modifications to exclude archaeological-specific measures

1.2 PURPOSE OF THE PALEONTOLOGICAL RESOURCES MANAGEMENT PLAN

The Project area lies on sediments assigned as low, moderate, and high paleontological potential. Moderate and high potential sediments may also underlie low potential sediments (see Sections 3.3 and 3.4). Paleontological monitoring of excavations impacting moderate and high potential sediments is required per MM CR-4 (Ecology and Environment, 2016). This PRMP will be reviewed and approved by the CPUC prior to commencement of construction activities.

1.3 REGULATORY FRAMEWORK

1.3.1 State Regulations

California Environmental Quality Act (CEQA)

The procedures, types of activities, persons, and public agencies required to comply with the California Environmental Quality Act (CEQA) are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000 et seq.) and further amended January 4th, 2013. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C).

1.3.2 Local Regulations

Los Angeles County

The Conservation and Natural Resources Element of the County of Los Angeles General Plan (County of Los Angeles, 2015) recognizes paleontological resources as non-renewable and irreplaceable resources that are an important part of the County's identity. The general plan includes four policies to protect paleontological resources (Goal C/NR 14):

- **Policy C/NR 14.1:** Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible;

- **Policy C/NR 14.2:** Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources;

- **Policy C/NR 14.5:** Promote public awareness of historic, cultural, and paleontological resources; and

- **Policy C/NR 14.6:** Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

SECTION 2

PROJECT PERSONNEL

Geraldine Aron, M.S., is the Qualified Paleontologist and Courtney Richards, M.S., is the Paleontological Assistant Manager for the Project. Both Ms. Aron and Ms. Richards are qualified under Society of Vertebrate Paleontology (SVP) standards and have been approved by the CPUC as Qualified Paleontologists for similar projects. This report was prepared by Joey Raum, B.S. GIS mapping was provided by Paul Nesbit, M.S. The report was reviewed by Paleo Solutions Qualified Paleontologist Paul C. Murphey, Ph.D.

SECTION 3

BACKGROUND

The Project is located within the Peninsular Ranges Geomorphic Province, which extends from the Los Angeles coastline to the San Bernardino Fault and from the San Diego coastline to the Colorado Desert. The Peninsular Ranges are characterized by northwest-trending mountains and valleys (Norris and Webb, 1976). The Project lies in the Los Angeles basin near the base of the San Gabriel Mountains and is characterized by low lying and low relief terrain to moderate and steep relief hills. The Project footprint lies within the cities of Monterey Park, Montebello, Rosemead, South El Monte, Commerce, Bell Gardens, Pasadena, and portions of unincorporated Los Angeles County.

3.1 PALEONTOLOGICAL RESOURCE ASSESSMENT REPORT

Paleontological research performed by Paleo Solutions during development of this PRMP included a geologic map review of the Project area and ½ mile radius; scientific literature review; online search of records maintained by the University of California Museum of Paleontology (UCMP); and review of Project geotechnical reports and construction plans. Paleontological potential assignments were developed using the Potential Fossil Yield Classification (PFYC) system (Appendix B; BLM, 2008), and monitoring and fossil treatment procedures were developed following the guidelines outlined in SVP's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (Appendix A; SVP, 2010).

3.2 FIELD EXAMINATION

A pedestrian survey was conducted on June 12, 2014. The survey included a thorough examination of the surface of the Project area to determine the presence of surface fossils and evaluate the potential for occurrences of subsurface fossils that could be unearthed during construction. The field survey was conducted by Kate Zubin-Stathopoulos, M.S., Paleontological Field Crew Supervisor, and Dane M. Miller, M.S., Paleontological Field Technician (Miller et al., 2014). Supplemental surveys for modification areas and Staging Yards 6 and 7 were conducted on December 16, 2014 and July 21, 2015, respectively (Lawson and Aron, 2015; Raum and Aron, 2015). The supplemental surveys were conducted by Colin F. Lawson, B.S., Cecilio D. Garcia, B.A., and Joey T. Raum, B.S., Paleontological Field Technicians. Paleontological monitoring during preconstruction pothole trenching to the north and south of Mesa Substation was also provided on January 26 and 28, 2015 (Richards and Aron, 2015).

3.3 DESCRIPTION OF THE RESOURCE

The following section of the report summarizes the results of the literature review, field surveys, and geologic map review completed for the paleontological inventory review portion of this investigation.

3.3.1 Geology Background

During the late Cretaceous to the present, the tectonic actions of the San Andreas and its related faults created the formation of basins often bounded by uplifted mountains (i.e., the Santa Ana and San Gabriel Mountains). The Proposed Project area lies in the greater Los Angeles Basin, which consists of several fault-bounded blocks. During the Miocene, the ocean covered this basin, depositing marine sediments on the basin floor. During the Pliocene, the rate of subsidence in the central portion of the basin accelerated, and some sediments were deposited in up to 6,000 feet of water. Deposition began to outpace subsidence in the late Pliocene, at the same time that the Puente Hills and San Gabriel Mountains were tectonically uplifting (Davis et al., 1989; Schneider, 1996). By the middle Pleistocene, the Los Angeles Basin was effectively landlocked, and terrestrial sediments were being deposited (Norris and Webb, 1976; Levi and Yeats, 2003; Aron, 2013).

3.3.2 Quaternary Young Alluvium

Quaternary young alluvial deposits (Qa and Qg) are present within the Project area (Figure 2). These younger alluvial deposits are Holocene in age. The Quaternary young alluvial deposits consist of poorly consolidated silt, sand, and gravel deposited along modern drainages and on floodplains. These deposits likely originate from the San Gabriel Mountains (McLeod, 2014).

3.3.3 Quaternary Older Alluvium

Quaternary older alluvium (Qoa) and older surficial deposits (Qae and Qog) are present within the Project area (Figure 2; Dibblee and Ehrenspeck, 1999). These deposits consist of moderately consolidated, non-marine poorly sorted silt, sand, and gravel. Quaternary older sediments are Pleistocene in age (1.8 million years ago to 11,000 years ago), and consists of silt, sand, and gravel that forms low to moderate relief hills within the Mesa Substation Project area. Additionally, several areas within the Project area that are flat-lying are also mapped as Quaternary older alluvium and older surficial deposits.

3.3.4 Fernando Formation

The Fernando Formation is Pliocene in age and consists of both marine and non-marine deposits. The formation is divided into the basal Repetto Claystone member (Tfr), the middle Pico member (Tfp and Tfps), and upper member (Tfsc). The upper member (Tfsc) lies in the Project area, and the two Pico units (Tfp and Tfps) are mapped in areas adjacent to the Project area (Figure 2) (Dibblee and Ehrenspeck, 1999). The upper member (Tfsc) is a light gray to tan colored non-marine sandstone-rich conglomerate containing pebbles, cobbles and fine to medium grained sandstone (Blake, 1991; Dibblee and Ehrenspeck, 1999). The Pico claystone (Tfp) is a silty claystone containing some silty sandstone, and the Pico sandstone (Tfps) is a silty sandstone which consists of light gray, very fine-grained and poorly bedded sediments.

3.4 PALEONTOLOGICAL POTENTIAL

No fossils are known from Quaternary young wash or alluvial deposits. Their young age indicates that they are unlikely to contain in situ paleontological resources. Due to the young age and/or disturbed nature of these deposits, they have low paleontological potential (PFYC Class 2).

Pleistocene geologic units, particularly older alluvium, are generally considered to have moderate to high potential because these units have yielded fossils of Ice Age mammals from nearby localities. These fossils are reposited at the Natural History Museum of Los Angeles County (LACM). Numerous other examples exist in the Los Angeles area. Examples include fossil plants, invertebrates, and mammals (e.g., ground sloth, rodents, horse, tapir, camel, deer, llama, mastodon, and mammoth) (Jefferson, 1991; Reynolds and Reynolds, 1991; Springer et al., 2010; Scott, 2010). Pleistocene-age fossils have been discovered on construction projects throughout coastal southern California. Older alluvium within the project area has moderate paleontological potential (PFYC Class 3).

The Fernando Formation has yielded marine fossils including bony fish, sharks, whales, dolphins, and invertebrates (Cooper et al., 2006). Specimens of shark teeth including great white, eagle ray and mako are the most common fossils (Cooper et al., 2006). Additionally, invertebrate shells may locally abundant (Woodring, 1938; Downs, 1968; Morris, 1976). Although it is not mapped as being present on the surface within the project area boundaries, the Fernando Formation may be disturbed during construction because it underlies the area at an unknown depth. The Fernando Formation has high paleontological potential (PFYC Class 4).

3.5 PERMIT REQUIREMENTS

No permits are required to for the paleontological work conducted on the Project.

SECTION 4

PALEONTOLOGICAL RESOURCES MANAGEMENT PLAN

At the request of SCE, and with permission from Garcia and Associates (GANDA), this paleontological resources management plan and the subsequent scope of work (section 5) have been modelled after, and in large part excerpted from, the GANDA paleontological monitoring plan for the Falcon Ridge Substation Project (2016) that was prepared on behalf of SCE. Minor modifications to the excerpted text were made for clarification.

4.1 RETENTION OF A QUALIFIED PALEONTOLOGIST

Per Mitigation Measure CR-5, prior to the commencement of ground disturbance, SCE will retain a qualified and CPUC approved paleontologist (per MM CR-4) to implement this PRMP and assign paleontological monitors to inspect ground disturbing activities impacting moderate and high potential sediments (Ecology and Environment, 2016). The Qualified Paleontologist and the paleontological monitors will meet the minimum qualifications set forth in the SVP (2010) guidelines[1].

4.2 CURATION AGREEMENT

Prior to the commencement of ground disturbance, a curation agreement with an accredited and approved paleontological repository will be obtained. The criteria for a paleontological repository

[1] Both the Qualified Paleontologist and the qualified paleontological monitors will be approved by the CPUC per MM CR-4.

are outlined in SVP guidelines (2010), which states that "A paleontological repository is a publicly supported, not-for-profit museum or university employing a permanent curator responsible for paleontological records and materials. Such an institution assigns accession and catalog numbers to individual specimens, which are stored and conserved to ensure their preservation under adequate security and climate control." The curation agreement will outline the conditions of receivership.

4.3 WORKER ENVIRONMENTAL AWARENESS PLAN (WEAP)

"Prior to construction, a Worker Environmental Awareness Plan (WEAP) will be developed as stated in the Environmental Impact Report. A presentation will be prepared by SCE and used to train all site personnel prior to the commencement of work. The WEAP will include a review of the local, state, and federal laws and regulations, instructions on the procedures to be implemented should unanticipated paleontological resources be encountered during construction, including stopping work in the vicinity of the find and contacting the appropriate environmental compliance specialist or subject matter expert. In addition to instruction on compliance with Applicant Proposed Measures and Mitigation Measures, all construction personnel will also receive a list of the SCE environmental specialist personnel associated with the project and relevant to the subject matter" (GANDA, 2016).

The above stipulations are mandated per MM CR-2 of the Project's FEIR (Ecology and Environment, 2016).

4.4 PRECONSTRUCTION MEETING AND PRMP ORIENTATION/TRAINING

"Prior to beginning the Project's ground-disturbing activities, the qualified paleontologist will attend a preconstruction meeting with SCE and the construction contractor representatives. The purpose of this meeting will be to coordinate paleontological monitoring activities with the contractor's plans and WEAP previously described in section 4.3" (GANDA, 2016).

4.5 GRADING PLANS AND EXCAVATION SCHEDULES

SCE will provide the CPUC approved Qualified Paleontologist with copies of construction maps for all areas of the Project in which ground disturbance will take place as well as a general schedule for excavations. As updates occur throughout the course of the Project, SCE and the construction contractor will provide the Qualified Paleontologist with updated scopes and schedules, as they become available.

SECTION 5

SCOPE OF WORK

5.1 PALEONTOLOGICAL RESOURCES MANAGEMENT PLAN COMPONENTS

This PRMP consists of the following components:

- Monitoring Plan Objectives
- Contractor Compliance with the Paleontological Resources Management Plan
- Program Staff and Responsibilities
- Safety Measures to be Implemented
- Monitoring Earth Moving
- Excavation Methods
- Fossil Treatment
- Volume of Bulk Samples to be Collected
- Preservation of Samples
- Preparation Procedures for Salvaged Specimens
- Storage
- Daily Monitoring Reporting
- Number of Monitors and Estimated Duration of Their Participation
- Equipment and Supplies
- Decision Thresholds
- Draft Final Report
- Accessioning of Fossil Remains

5.2 MONITORING PLAN OBJECTIVES

"This PRMP is intended to assist SCE in complying with environmental laws and regulations requiring mitigation of significant impacts on significant paleontological resources within the … Project. The PRMP will allow for collection of both macrofossil specimens uncovered during project ground-disturbing activities and microvertebrate fossils salvaged from bulk sediment sample processing. This PRMP permits the preservation of significant specimens that would otherwise be destroyed if monitoring were not conducted. Salvaged significant specimens will be identified and deposited in a qualified repository and be made available for scientific study and/or public display" (GANDA, 2016).

5.3 CONTRACTOR COMPLIANCE

"SCE will ensure that SCE personnel, the construction contractor, sub-contractors, and paleontological mitigation monitors understand and fully implement the SCE- and CPUC-approved PRMP. Compliance with the PRMP will be achieved as the procedures outlined below are implemented and completed" (GANDA, 2016).

5.4 PROGRAM STAFF AND RESPONSIBILITIES

This section defines the roles of the Qualified Paleontologist and the paleontological monitor(s) and summarizes their responsibilities with regards to the Project and the PRMP.

5.4.1 Qualified Paleontologist

*"*The qualified paleontologist will oversee development of the treatment program and its implementation. The qualified paleontologist will:

- ensure that the PRMP is conducted in compliance with the approved mitigation measures and SVP (2010) standard guidelines;
- be consulted as necessary by the paleontological monitor and as outlined in the PRMP;
- consult with SCE's Subject Matter Expert (SME) on salvage operations, particularly when equipment and additional temporary monitors are needed to speed up fossil recovery.
- consult with SCE's SME and advise the construction contractor on how to proceed if fossils are discovered;
- consult with the construction contractors to determine the schedule and allow for adequate time for paleontological monitors to be on site as required;
- supervise implementation of the WEAP training and conduct initial training session, or as directed by SCE;
- schedule and coordinate paleontological monitor(s);
- supervise the activities of paleontological monitor(s);
- ensure proper ratio of paleontological monitors needed to heavy equipment being used;
- coordinate field and laboratory processing of fossiliferous sediment samples collect by the paleontological monitor(s);
- directly oversee salvage to ensure the collection of a representative sample of the fossils uncovered by ground-disturbing activities;
- record associated specimen/sample data and corresponding geologic and geographic site data;
- plot fossil/sample sites on maps;

- determine whether field and laboratory processing of sediment samples for microvertebrate fossils is warranted;
- oversee final identification of fossil remains and determination of their significance;
- supervise curation of salvaged fossils at the designated repository and archiving of associated specimen and corresponding geologic and geographic locality data into the repository's computerized databases; and
- be responsible for preparation of the draft and final report" (GANDA, 2016).

5.4.2 Paleontological Monitor

"The paleontological monitor(s) assigned by the qualified paleontologist will:

- conduct initial training session in accordance with the WEAP, or as directed by SCE;
- conduct periodic inspections of all earth-moving activities … [as described in section 5.15.1], as well as soil stockpiles and disposal sites;
- flag newly discovered fossil sites and temporarily divert ground-disturbing equipment around the site, as necessary, until the fossil(s) has been evaluated and, if warranted, salvaged;
- salvage fossils uncovered by ground-disturbing activities;
- collect potentially fossiliferous sediment samples;
- document project-related ground-disturbing activities, their location, and other relevant information including a photographic record;
- take accurate and detailed field notes, photographs, record associated specimen/sample and corresponding geologic and geographic site data;
- conduct initial (field) processing of fossiliferous sediment samples for microvertebrate fossils;
- prepare fossils to the point of identification; and
- assist with the preparation of the draft and final reports" (GANDA, 2016).

5.5 SAFETY MEASURES TO BE IMPLEMENTED

"All paleontological personnel involved in the project will follow and obey all safety measures established by SCE for the … Project" (GANDA, 2016).

5.6 MONITORING EARTHMOVING

"Paleontological monitors will … inspect earth moving and other ground disturbances, including grading, excavation, trenching, and boring … [as described in section 5.15.1]. The frequency and

duration of the [monitoring and] spot checks will be dependent upon the schedule, type, and depth of ground-disturbing activities, and will be determined by the qualified paleontologist in coordination with SCE's SME. The need to maintain, increase, or reduce [monitoring and] spot checking will be determined based on field observations and in coordination with SCE, CPUC, and other appropriate agencies.

The paleontological monitor has the authority to halt work in the vicinity of any newly discovered fossils in order to protect and preserve them. The paleontological monitor will flag any newly discovered fossil sites. If ground disturbances in the vicinity of the fossil site have not been completed, the paleontological monitor will temporarily divert earth moving around the site, as necessary [if an unusually large or particularly significant fossil (e.g., nearly complete skeleton, new species, or an unusual concentration of smaller fossils such as a fossil leaf flora, a fish fauna, or a microvertebrate site) is discovered], until the fossil(s) has been evaluated and, if warranted, excavated. The paleontological monitor will advise all heavy equipment operations and the construction supervisor that the flagged fossil site should be avoided by a minimum of 50 feet (15 meters) on all sides. This area, which is intended to protect fossil specimens until they are removed, is called an "exclusion zone." The paleontological monitor will notify the qualified paleontologist about the fossil site. The qualified paleontologist will consult with SCE's SME on salvage operations, particularly regarding the need for extra equipment and operator(s)" (GANDA, 2016).

Per MM CUL-5, in the case that a previously unknown paleontological resource is discovered during construction activities, all work within 15 meters of the resource shall be stopped, and the CPUC-approved paleontologist shall determine, after consulting with SCE, whether the resource can be avoided. If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, the paleontologist shall determine whether the resource is unique under Part V of CEQA Guidelines Appendix G. A paleontological resource shall be considered unique if it meets the definition of a significant paleontological resource under the 2010 Society of Vertebrate Paleontology Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources definition (see Table 1 and Appendix A).

Substantiation of the uniqueness conclusion shall be provided to the CPUC for review and approval. If the resource is determined not to be unique, work may commence in the area.

If the resource is unique, then work shall remain stopped, and the approved paleontologist shall consult with the applicant and the CPUC regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA. Preservation in place,

i.e., avoidance, is the preferred method of mitigation for impacts to paleontological resources and shall be required to mitigate impacts to previously undiscovered resources unless the CPUC approved paleontologist determines that another method would provide superior mitigation of impacts to the resource. Other methods include ensuring that the fossils are recovered, prepared, identified, catalogued, and analyzed according to current professional standards under the direction of a qualified paleontologist. Methods of recovery, testing, and evaluation shall adhere to current professional standards for recovery, preparation, identification, analysis, and curation, such as the 2010 Society of Vertebrate Paleontology Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources.

If the specimen is excavated, "the paleontological monitor will assign a unique field number to each fossil specimen or sediment sample and record the field number and associated specimen/sample data (identification by taxon and element, sample size, etc.), corresponding geologic data (particularly lithology, stratigraphic unit stratigraphic level within the unit, inferred age, etc.), and geographic site data (location, elevation, etc.) in the monitor's field notebook and in the Field Recorded Environmental Database (FRED), or equivalent reporting tool as provided by SCE. Each field number and fossil/sampling site will be plotted on both a 1:24,000-scale topographic map and a measured section of the exposed stratigraphic sequence" (GANDA, 2016). Per MM CR-5, work can commence following resource recovery and CPUC approval (Ecology and Environment, 2016).

"Upon receiving approval from CPUC, the paleontological monitor will communicate to the construction manager/heavy equipment operator that earth moving can proceed. In most cases, any potential construction delay should be limited to a few hours. Provisions will be made of additional paleontological monitors to monitor or help in removing large or abundant fossils to reduce potential delays to excavation schedules" (GANDA, 2016).

5.7 EXCAVATION METHODS

Fossil salvages may consist of the relatively rapid removal of small isolated fossils from an active cut, to hand-quarrying of larger fossils over several hours, to excavations of large fossils or large numbers of smaller fossils from a bone bed over several days. The duration of each excavation is determined by the size, preservation, and number of fossils at each locality. Macroscopic specimens confined in loose sediments can be removed by hand, while other fossils may be encased in harder material that require breaking or excavating. Larger fossils and more fragile fossils may require the application of plaster jackets. All scientifically important fossils should be salvaged and fully documented within a detailed stratigraphic framework as construction conditions and safety considerations permit. All excavations must be carried out in consultation

with the Qualified Paleontologist, who in turn will notify SCE and the CPUC. Fossils will be excavated and removed from the work area as quickly as possible, in order to limit the impeding of construction operations and flow.

5.8 FOSSIL TREATMENT

"All fossil specimens salvaged as a result of the PRMP will be treated in full compliance with SVP (2010) standard guidelines for mitigating adverse construction-related environmental impacts to paleontological resources and for the acceptance of a mitigation fossil collection by a qualified repository.

All salvaged fossils will be:

- stabilized and prepared to the point of identification, if possible;
- identified to lowest taxonomic level possible by paleontologists qualified and experienced in the identification of that group of fossils;
- temporarily stored, unprepared, for no more than one year to prevent decomposition and pest intrusion;
- accessioned into the fossil collection of the designated repository where they will be permanently stored and maintained, and, along with archived specimen and locality data, made available for future study by qualified scientific investigators;
- curated in the assigned repository. Specimens will be assigned and labeled with appropriate museum specimen and corresponding locality numbers, placed in specimen trays, and, if appropriate, vials, with completed specimen data cards; and
- catalogued with specimen and locality numbers and corresponding geologic and geographic locality data, and entered into appropriate museum catalogs and computerized databases" (GANDA, 2016).

5.9 VOLUME OF BULK SAMPLES TO BE COLLECTED

"Many significant vertebrate fossils (e.g., small mammal, bird, reptile, or fish remains) within sedimentary matrices are too small to be visible with the unaided eye. Fine-grained sedimentary deposits and paleosols (fossil soils) often contain these microvertebrate fossils, which are salvaged through concentration by screen washing.

As recommended by SVP (2010) standard guidelines, sediments of high paleontological potential (e.g., older alluvial fan deposits), if encountered during ground-disturbing activities, will periodically be sifted or screened to look for fragmentary or small- to microscopic-sized vertebrate

fossils (primarily the teeth of fish, amphibians, reptiles, rodents, and insectivores). As recommended by SVP (2010) standard guidelines, if microvertebrate fossils are discovered during screening a standard sample of fossiliferous sediment, they may be collected and processed from each stratigraphic unit from which microvertebrate fossils are present.

Sediment collected during the salvage of larger fossils may also be screened for microfossils. Typically, approximately 200 pounds of soil is screened in cases where isolated bones are discovered. Large bulk samples may be taken in areas where identifiable microvertebrate fossils have been recovered during test screening, where a relatively complete vertebrate specimen is encountered, or where high densities of microfossils are present. In accordance with SVP (2010) standard guidelines, a bulk sample of 6,000 pounds [approximately 4.0 cubic yards/meters] of potentially fossiliferous sediment may be collected from the site with the assistance of a front-end loader and operator.

Each sediment sample will be wet screened through 1/8th-inch, 20-mesh, and/or 30-mesh screens as appropriate and the concentrates dried. Wet screening will be conducted away from construction activities, and can be performed off-site if necessary. Salvaged fossil bones and teeth will be sorted, identified, and analyzed for their significance. Water discharged from the wet-screening process will be controlled using best management practices (BMPs) outlined in the Project Storm Water Pollution Prevention Plan (SWPPP). Paleontological monitors performing wet screening will be familiar with the SWPPP, and apply appropriate BMPs as necessary to prevent contamination of storm water. A Water Pollution Control Program (WPCP) may be required to manage discharges form any screen-washing that takes place off-site. In this case, such a document will be prepared by SCE staff or its designated representative.

Final processing will include separating any fossils from the remaining concentrate with the aid of a low-powered microscope. The qualified paleontologist will determine whether field and laboratory processing of an entire soil sample is warranted and will have the authority to have al processing of the sample discontinued and any remaining sediment discarded, if the sample is not paleontologically productive and/or proves to be of limited scientific value" (GANDA, 2016).

5.10 PRESERVATION OF SAMPLES

Sediment samples may be obtained and stored for potential scientific analysis and/or educational purposes. Collecting of these samples will be determined and coordinated by the Qualified Paleontologist. The quantity of a sample will be relatively small compared to bulk matrix samples collected for laboratory screening. Sediments collected may include lithologically unique samples,

samples for determining paleoecologies and depositional environments, and samples for paleomagnetic, radiometric, and palynological analyses.

5.11 CURATION

"Salvaged specimens will be curated in a qualified repository that securely houses paleontological specimens under appropriate climatic conditions. An approved curation agreement with an approved paleontological repository will be obtained prior to the start of ground disturbance. Additionally, a complete set of field notes, geologic maps, stratigraphic sections, and photographs will accompany the fossil collections. Specimens should be stored in a fashion that allows retrieval of specific individual specimens by researcher in the future" (GANDA, 2016).

5.12 DAILY MONITORING REPORTING

"At the end of each working day, each paleontological monitor will record daily observations in the Field Recorded Environmental Database (FRED), or equivalent tool as provided by SCE. These observations will include the location and type of monitoring activities and will document all fossil specimen(s) salvaged and/or fossiliferous sediment samples collected, along with corresponding geologic and geographic data. The paleontological monitor will also photograph construction activities, sediments encountered, and paleontological resources discovered. A photographic log will be maintained and submitted to SCE weekly or upon request" (GANDA, 2016).

5.13 NUMBER OF MONITORS AND ESTIMATED DURATION OF PARTICIPATION

"The construction schedule has not been determined at this time. SCE will be responsible for providing copies of all construction design drawings and plans, and regular updates to the Project schedule to the Qualified Paleontologist. SCE or the construction manager will notify the Qualified Paleontologist at least 24 hours in advance, and up to 48 hours in advance when possible, when a monitor is needed on the construction site(s). Additional monitors may be needed if excavations occur at multiple locations or if a location produces a high abundance of fossils. It is not possible to predict the number and type(s) of fossils that might be discovered and salvaged during construction.

All paleontological monitoring will be conducted under the direction of the CPUC approved Qualified Paleontologist. All monitoring personnel will have a minimum of a Bachelor's degree in geology, paleontology, or related field" (GANDA, 2016).

5.14 EQUIPMENT AND SUPPLIES

Monitors will comply with all requirements established by the construction managers regarding PPE. This generally includes safety vests, hard hats, steel-toed boots, and safety glasses. The construction managers may also require gloves, hearing protection, or other protective equipment. Monitors should also be equipped with flagging, survey stakes, and tools for fossil exploration and salvage including x-acto knives, awls, brushes, picks, chisels and shovels. Other essential tools for monitors include chemical preservatives such as Paraloid B-72, specimen containers such as vials and plastic bags, a GPS receiver, a field notebook, data recording forms or tablets, a digital camera, and a plaster kit. All paleontological monitors will have sufficient paleontological training and field experience to demonstrate acceptable knowledge of fossil identification, collection methods, paleontological techniques, and stratigraphy.

5.15 DECISION THRESHOLDS

Based on the geotechnical reports (Ninyo and Moore, 2015; 2016), the depth of Fernando Formation across the Project area varies between zero feet to 22.5 feet deep, with an average depth of approximately eight feet deep. There is no apparent geographical depth trend, which makes it difficult to extrapolate the depth of bedrock at one location to adjacent locations. Furthermore, Quaternary older alluvial sediments, which overlie Fernando Formation, were recorded at depths ranging from zero feet to 13 feet deep, with an average depth of approximately five feet deep (2015; 2016). All 35 geotech borings have Fernando Formation recorded. Eleven of the boring holes do not have older alluvium recorded.

5.15.1 Geologic Units and Monitoring Level of Effort

Due to the uncertain depth of Fernando Formation across the Project area, initial full-time paleontological monitoring will be implemented during all excavations into areas mapped as native, Pliocene-age Fernando Formation (PFYC Class 4) and Pleistocene-age older alluvium (PFYC Class 3). Paleontological monitoring will not be implemented in artificial fill (non-native sediments), previously disturbed sediments, or Holocene-age alluvial and wash deposits (PFYC Class 2); however, due to the erratic trend of Fernando Formation depths, initial spot-checks will be implemented for excavations exceeding five feet depth into areas mapped as Holocene-age alluvial and wash deposits and artificial fill, in order to check for the presence of underlying older alluvium and Fernando Formation. Furthermore, paleontological monitoring will not be implemented for the following construction excavation activities regardless of the geologic unit sensitivity: pile-driving, directional boring, and augering of three foot diameter holes or less. At

the direction of the Qualified Paleontologist, if Fernando Formation or older alluvium are observed in areas designated as PFYC 2 where spot-checking is taking place, full-time monitoring should occur. Conversely, if the geological evidence indicates that sediments mapped as older and ranked as PFYC 3 or 4 are in fact younger and have a low potential to yield paleontological resources, the level of effort should be reduced from full-time to spot-checking. Paleontological monitoring should cease when construction excavation of undisturbed native Pliocene and Pleistocene-age sediments concludes. Any change to the monitoring effort (intensity of monitoring or locations to be monitored) must be approved by SCE and the CPUC.

5.15.2 Notifications Procedure

When scientifically significant fossil discoveries are made, they will be quickly and professionally explored and recovered in order to minimize construction delays. Additional qualified paleontological monitors will be mobilized to assist with the salvage as needed. Per MM CR-4, paleontological monitors have the authority to temporarily halt construction work in the vicinity of any potential paleontological resource discoveries (Ecology and Environment, 2016). Per MM CR-5, upon discovery of paleontological resources by paleontologists or construction personnel, work within 15-meters (~50-feet) of the discovery shall be halted and the Qualified Paleontologist notified (2016). The paleontologist will inspect the discovery and determine if the resource(s) can be avoided or if further action is necessary. Once the find has been inspected and a preliminary assessment made, the Qualified Paleontologist will notify the CPUC and proceed with data recovery in accordance with the approved plan consistent with SVP paleontological resource guidelines (SVP, 2010). If the resource(s) is determined to be significant and cannot be avoided, the paleontologist will consult with SCE and the CPUC regarding methods to ensure that no substantial adverse change will occur to the significance of the resource pursuant to CEQA. Avoidance of significant resources is the preferred methodology; however, in cases where avoidance is not feasible, the Qualified Paleontologist may direct the recovery of the resources. Methods of recovery, testing, and evaluation shall adhere to current professional standards for recovery, preparation, identification, analysis, and curation such as the Standard Procedures for the Assessment of Adverse Impacts to Paleontological Resources (SVP, 2010).

5.15.3 Salvage

Macrofossils:

"All large bone fossils (macrofossils) that are identifiable are considered significant. If macrofossils are uncovered during ground-disturbing activities, they will be excavated to determine if they are identifiable. Situations may exist where fossil excavation may not be safe or

feasible (e.g., where excavation would undercut an existing structure, pole, or tower), or where the discovery of the fossils was concurrent with the completion of the ground-disturbing activity (e.g., during mechanized boring for a tower or pole footing). If the salvaged fossils are clearly not identifiable, the excavation will be terminated and construction can resume. Identifiable fossils will be excavated and salvaged to the extent possible. Unidentifiable remains may only be salvaged at the discretion of the qualified paleontologist. If unidentifiable remains are salvaged, further processing will be done only if authorized by the qualified paleontologist, SCE, and CPUC" (GANDA, 2016).

Microvertebrate Fossils:
"1) Bulk samples (6,000 pounds) of in situ sediments will be collected for processing only under the following conditions: a) a 200-pound sample will be collected from a stratigraphic unit suspected of containing microvertebrate fossils in close proximity, and b) if, upon processing, identifiable microvertebrate fossils are recovered.

2) When bulk sediments are collected, a sample from a single stratigraphic unit will not normally exceed 6,000 pounds, unless the uniqueness of the recovered fossils dictates salvage of large amounts (SVP 2010).

3) During processing of a bulk sample, if too few scientifically significant microvertebrate fossils are recovered, the qualified paleontologist may authorize suspension of further processing of the sample and the sample may be discarded. The following points constitute conditions under which the sample processing may be suspended: 1) no or few microfossils are discovered after processing 10 percent (600 pounds) of the sample, 2) fossil preservation quality is too poor, and/or 3) fossils are not temporally or paleoenvironmentally diagnostic or significant for other reasons. Any unidentifiable microvertebrate fossils salvaged during sample processing will not receive further treatment" (GANDA, 2016).

5.16 DRAFT FINAL REPORT

"Following the completion of paleontological monitoring for the … Project, a draft final report will include the results of the PRMP prepared by the qualified paleontologist. The draft final report will discuss the following:

- the background of the PRMP;
- geology/stratigraphy exposed by excavations;
- mitigation methods, including fossil treatment;

- scientific significance and importance of salvaged fossil remains (if any);
- results and findings of analyses conducted on the fossil remains (if any); and
- research questions that were resolved or raised as a result of the analyses.

The report also will include a United States Geological Survey (USGS) standard 1:24,000-scale topographic map showing each locality from which a significant fossil (if any) was collected and a measured stratigraphic section or sections, as appropriate, showing the stratigraphic position from which each significant fossil was collected (if any). The report also will include an estimate of the time to complete any remaining treatment and/or analyses of the salvaged fossil remains and to prepare the final report on the results of the PRMP. The draft final report will be submitted to SCE and CPUC within 30 days of the last day of ground-disturbing activities for the project.

SCE and CPUC will review the draft final report on the results of the PRMP for completeness and advise the qualified paleontologist of any changes needed in the final report, including the proposed schedule and cost estimate for completing the final report" (GANDA, 2016).

5.17 ACCESSIONING OF FOSSIL REMAINS

"After completing the draft final report on the results of the PRMP, the qualified paleontologist will ensure that all fossil remains salvaged as a result of the PRMP are delivered to the designated repository for accessioning into the appropriate fossil collection. SCE will maintain in its environmental compliance files a copy of the museum storage agreement with the repository documenting the acceptance of fossils recovered as a result of implementing this PRMP. Under the direction of the qualified paleontologist, the final report will include a summary of the field and laboratory methods, site geology and stratigraphy, faunal list, and a brief statement of the significance and relationship of the site to similar fossil localities. A complete set of field notes, geological maps, stratigraphic sections, photographs, and a list of identified specimens will accompany the report. The report will be finalized only after all aspects of the Project are completed. The final report, together with its accompanying documents, constitutes the final objective of the PRMP. Copies of the final report will be deposited with SCE, CPUC, and the designated museum repository.

Acceptance of the final report by SCE and CPUC, as well as accession of any fossil remains discovered into an accredited museum repository, will confirm that the project has caused less than significant impacts to paleontological resources, and will signify completion of the mitigation program for the project" (GANDA, 2016).

SECTION 6

ACRONYMS

APM	Applicant Proposed Measure
BMP	Best Management Practices
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
ESA	Environmentally Sensitive Area
FEIR	Final Environmental Impact Report
FRED	Field Recorded Environmental Database
GANDA	Garcia and Associates
LACM	Natural History Museum of Los Angeles County
MM	Mitigation Measure
PFYC	Potential Fossil Yield Classification
PRMP	Paleontological Resources Management Plan
ROW	Right of Way
SCE	Southern California Edison
SME	Subject Mater Expert
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
UCMP	University of California Museum of Paleontology
USGS	United States Geologic Survey
WEAP	Worker Environmental Awareness Plan
WPCP	Water Pollution Control Plan

SECTION 7

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APPENDIX A

STANDARD PROCEDURES FOR THE ASSESSMENT AND MITIGATION OF ADVERSE IMPACTS TO PALEONTOLOGICAL RESOURCES

Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources

Society of Vertebrate Paleontology
Impact Mitigation Guidelines Revision Committee

Abstract
Fossils are nonrenewable paleontological resources that are subject to impacts from land development. Procedures are presented for evaluating the potential for impacts of a proposed action on paleontological resources and for mitigating those impacts. Impact mitigation includes pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The objective of these procedures is to offer standard methods for assessing potential impacts to fossils and mitigating these impacts.

Introduction
Fossils are nonrenewable paleontological resources that are afforded protection by federal, state, and local environmental laws and regulations. The Paleontological Resources Preservation Act (PRPA) of 2009 calls for uniform policies and standards that apply to fossils on all federal public lands. All federal land management agencies are required to develop regulations that satisfy the stipulations of the PRPA. Section 6302 of the PRPA mandates that federal agencies "*shall manage and protect paleontological resources on Federal land using scientific principles and expertise.*" Thus, federal agencies need the help of the professional paleontological community in the formulation and implementation of these PRPA-mandated policies and regulations. The potential for destruction or degradation of paleontological resources on both public and private lands selected for development under the jurisdiction of various governmental planning agencies is recognized. The standard procedures below are intended to be applicable to both private and public lands under the jurisdiction of local, city, county, regional, state, and federal agencies. Protection of paleontological resources includes: (a) assessment of the potential for land to contain significant paleontological resources which could be directly or indirectly impacted, damaged, or destroyed by proposed development and (b) formulation and implementation of measures to mitigate these adverse impacts, including permanent preservation of the site and/or permanent preservation of salvaged fossils along with all contextual data in established institutions.

Assessment of the Paleontological Potential of Rock Units
Rock units are described as having (a) high, (b) undetermined, (c) low, or (d) no potential for containing significant paleontological resources.

High Potential
Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous

and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.). Paleontological potential consists of both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, plant, or trace fossils and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, paleoecologic, taphonomic, biochronologic, or stratigraphic data. Rock units which contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and rock units which may contain new vertebrate deposits, traces, or trackways are also classified as having high potential.

Undetermined Potential

Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist (see "definitions" section in this document) to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.

Low Potential

Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.

No Potential

Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

Discussion

It is extremely important to distinguish between archaeological and paleontological resources (see "definitions" section in this document) when discussing the paleontological potential of rock units. The boundaries of an archaeological resource site define the areal/geographic extent of an archaeological resource, which is generally independent from the rock unit on which it sits. However, paleontological sites indicate that the containing rock unit or formation is fossiliferous. Therefore, the limits of the entire rock unit, both areal and stratigraphic, define the extent of paleontological potential.

It is also important to ascertain if the paleontological resources are uniformly distributed throughout a rock unit or if they are confined as localized concentrations to specific members or facies. Using this information, paleontologists can develop maps which suggest areas that are likely to contain paleontological resources. These maps (Paleontological Resource Potential Maps) form the basis for preliminary planning decisions on which areas require a detailed paleontological resource impact assessment by a qualified professional paleontologist and which areas do not. Lead agency evaluation of a proposed project relative to such paleontological resource potential maps should trigger a "request for

opinion" from a qualified professional paleontologist, state paleontological clearing house, or an accredited institution with an established paleontological repository housing paleontological resources from the region of interest.

The determination of the paleontological resource potential of an area proposed for development is first founded on a review of pertinent geological and paleontological literature, geological maps, and on records in fossil locality databases of paleontological specimens deposited in institutions (e. g., museums and universities). This preliminary review may clearly indicate that particular rock units have known high potential. If the paleontological resource potential of a rock unit cannot be delimited from the literature search and specimen records, a field survey by a qualified professional paleontologist will be necessary to determine the fossiliferous potential and the distribution or concentrations of fossils within the extent of the rock units present in a specific project area. The field survey may need to extend outside the defined project limits to areas where the relevant rock units are better exposed. If the rock units in an area are determined to have a high potential for containing paleontological resources, a program to mitigate impacts to fossil resources must be developed. In areas containing rock units with high potential, a preconstruction survey (intensive reconnaissance) may be necessary to locate surface concentrations of fossils which might require salvage in advance of excavations to avoid delays to construction schedules.

Measures to Mitigate Adverse Impacts from Development

Measures for adequate protection or salvage of significant paleontological resources are applied to areas determined to contain rock units that have either a high or undetermined potential for containing significant fossils. The Paleontological Resource Preservation Act of 2009 establishes a uniform code for decision-making on all federal lands. Specific mitigation measures generally need not be developed for areas of low paleontological potential. Developers (public and private) and contractors should be made aware, however, that if there is not an on-site monitor it will be necessary to contact a qualified professional paleontologist if fossils are unearthed in the course of excavation. This contingency should be planned for in advance. In order to save time and project delays, in the advance planning phases of a project the developer should contact a qualified professional paleontologist and arrange for the salvage of any unanticipated fossils. The paleontologist will then salvage the fossils and assess the necessity for further mitigation measures, if applicable. Decisions regarding the intensity of the paleontological resource impact mitigation program will be made by the project paleontologist on the basis of the significance of the paleontological resources, and their biostratigraphic, biochronologic, paleoecologic, taphonomic, and taxonomic attributes, not on the ability of a project proponent to fund the paleontological resource impact mitigation program.

In areas determined to have high or undetermined potential for significant paleontological resources, an adequate program for mitigating the impact of development must include:

1. an intensive field survey and surface salvage prior to earth moving, if applicable;

2. monitoring by a qualified paleontological resource monitor (see "definitions" section in this document) of excavations in previously undisturbed rock units;

3. salvage of unearthed fossil remains and/or traces (e. g., tracks, trails, burrows, etc.);

4. screen washing to recover small specimens, if applicable;

5. preparation of salvaged fossils to a point of being ready for curation (i. e., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles where appropriate);

6. identification, cataloging, curation, and provision for repository storage of prepared fossil specimens; and

7. a final report of the finds and their significance.

All phases of mitigation must be supervised by a qualified professional paleontologist who maintains the necessary paleontological collecting permits and repository agreements. All field teams will be supervised by a paleontologist qualified to deal with the significant resources that might be encountered. The lead agency must assure compliance with the measures developed to mitigate impacts of excavation. To assure compliance at the start of the project, a statement that confirms the site's paleontological potential, confirms the repository agreement with an established public institution, and describes the program for impact mitigation, must be deposited with the lead agency and contractor(s) before any ground disturbance begins. In many cases, it will be necessary to conduct a salvage program prior to grading to prevent damage to known paleontological resources and to avoid delays to construction schedules. The impact mitigation program must include preparation, identification, cataloging, and curation of any salvaged specimens. All field notes, photographs, stratigraphic sections, and other data associated with the recovery of the specimens must be deposited with the institution receiving the specimens. Since it is not professionally acceptable to salvage specimens without preparation and curation of specimens and associated data, costs for this phase of the program must be included in the project budget. The mitigation program must be reviewed and accepted by the lead agency. If a mitigation program is initiated early during the course of project planning, construction delays due to paleontological salvage activities can be minimized or even completely avoided.

Standard Procedures
These standard procedures for paleontological resource impact assessment and mitigation are designed to apply to areas containing rock units with high, low, and undetermined paleontological resource potential.

Assessment before Construction Starts
An adequate preconstruction paleontological resource impact assessment is the key to developing an adequate paleontological resource impact mitigation program. Only a professional paleontologist is qualified to prepare a paleontological resource impact assessment. An adequate assessment of potential impacts typically includes all the following elements:

1. Literature Search—A review of the pertinent paleontological, geological, geotechnical, and environmental literature provides an information baseline for evaluating the extent of previous paleontological work in an area. Such a review also provides a fundamental basis for formulating mitigation plans and for understanding the significance of paleontological resources. The preconstruction assessment should also include examination of geotechnical reports, borehole logs, and geologic cross sections to address whether project excavations will impact rock units with high potential.

2. Records Search—A review of institutional localities and specimen records provides a means for determining the extent of previous fieldwork and fossil recovery in, and adjacent to, an area of interest. This task can be accomplished either by sending a written request for information to the relevant institution(s) or visiting the institution to review the records directly. A simple, on-line search of an institution's records is often incomplete and inadequate for determining the number and extent of known fossil localities in an area.

3. Consultation with Others—The preconstruction assessment should include consultation with geologists and paleontologists knowledgeable about the paleontological resource potential of rock units present in the vicinity of the proposed project.

4. Field Survey—The assessment should include a field survey by a qualified professional paleontologist and approved staff, as needed, to determine the paleontological potential of each rock unit, to re-examine any known fossil localities on or near the project, to search for unknown fossil localities, and to delimit the specific boundaries of rock units within the project area.

5. Reports—A paleontological resource impact assessment report and a project-specific paleontological resource impact mitigation program should be prepared based upon data gathered during the assessment.

6. Agency Confirmation—Prior to ground disturbance, the lead agency should review the paleontological resource impact assessment and proposed mitigation program to determine the adequacy of the proposed program.

7. Repository Agreement—The project paleontologist should have a repository agreement arranged prior to the start of earth-moving for the project.

8. Pre-excavation meetings—The project paleontologist should hold pre-excavation meetings with representatives of the lead agency, the developer or project proponent, and contractors to

explain the importance of fossils, the laws protecting fossils, the need for mitigation, the types of fossils that might be discovered during excavation work, and the procedures that should be followed if fossils are discovered. Defining the process of salvaging fossils will reduce project delays.

Paleontological Resource Mitigation Plan

Prior to any ground disturbance at the project site, a paleontological resource mitigation plan should be prepared by a qualified professional paleontologist, who then will implement the plan as the project paleontologist, program supervisor, and principal investigator. The paleontological resource mitigation plan establishes the ground rules for the entire paleontological resource mitigation program. Excavations at the project site may reveal conditions unanticipated when the paleontological resource mitigation plan was prepared. These conditions may require additional tasks not described in the previously prepared project impact mitigation plan. The project paleontologist should be the person who makes these project-specific modifications to the paleontological resource mitigation program in consultation with representatives of the lead agency and project proponent.

Adequate Monitoring

For excavations in rock units of known high potential, the project paleontologist or paleontological monitor will need to be present initially during 100% of the earth-moving activities. After 50% of excavations are complete in either an area or rock unit and no fossils of any kind have been discovered, the level of monitoring can be reduced or suspended entirely at the project paleontologist's discretion. For excavations in rock units with high or undetermined potential, it is never acceptable to have excavation monitoring done by construction workers, engineers, or persons who are not qualified paleontological resource monitors (see "definitions" section below). For excavations in rock units determined by a qualified professional paleontologist to have low potential, non-paleontologists may monitor for fossils. If potential paleontological resources are discovered during excavations in a rock unit with low potential, all ground disturbance in the vicinity of the find should stop immediately until a qualified professional paleontologist can assess the nature and importance of the find and recommend appropriate salvage, treatment, and future monitoring and mitigation.

Paleontologists who monitor excavations must be experienced in locating and salvaging fossils, and collecting necessary associated critical data. The paleontological resource monitor must be able to document the stratigraphic context of fossil discovery sites. Paleontological resource monitors must be properly equipped with tools and supplies to allow rapid removal of specimens. The monitor must be empowered to temporarily halt or redirect the excavation equipment away from fossils to be salvaged. Some lead agencies require that paleontological monitors be approved prior to performing any field work.

To reduce potential delays to excavation schedules, provision must be made in the mitigation program for additional assistants to monitor or help in removing large or abundant fossils. If many pieces of heavy equipment are in use simultaneously but at diverse locations, each location will need to be individually monitored.

Macrofossil Salvage

Many specimens recovered from excavations are readily visible to the eye and large enough to be easily recognized and removed. Upon discovery of such macrofossils, the monitor will flag the fossiliferous area for avoidance until the project paleontologist can evaluate the resource and develop plans for removal/salvage of these specimens. Some fossil specimens may be fragile and require consolidation

with archival quality media (e. g., Acryloid, Butvar, or Vinac) before moving. Others may require protection by encasing them within a plaster jacket before removal to a laboratory for later preparation and conservation. Occasionally specimens encompass all or much of a skeleton and will require moving either as a whole or in multiple blocks for later preparation. Such specimens require time to excavate and strengthen with a hardening solution before removal and the patience and understanding of the contractor to recover the specimens properly. It is thus important that contractors and developers are fully aware of the importance and fragility of fossils for their recovery to be undertaken with the optimum chances of successful extraction.

Avoidance and Site Protection

In exceptional instances the process of preconstruction assessment or construction monitoring itself may reveal a fossil occurrence of such importance that salvage or removal is unacceptable to all concerned parties. In such cases, the project design may need to be modified to avoid, protect and/or exhibit the fossil occurrence, e. g., in the floor or wall of a museum or as a basement exhibit in a mall. Under such circumstances, the site may be declared and dedicated as a protected resource of public value. Associated fossil fragments salvaged from such a site should be placed in an approved institutional repository. Federal land managers have the ability to set aside such exceptional areas providing documentation supports special management considerations.

Microfossil Salvage

Many significant vertebrate fossils (e. g., small mammal, bird, reptile, amphibian, or fish remains) are too small to be readily visible within the sedimentary matrix and are referred to as "microvertebrates". Small fossils also include non-vertebrate paleoenvironmental indicators (e. g., foraminifers, small gastropods, and plant seeds). Fine-grained sedimentary horizons (e. g., mudstones and paleosols) most often contain such fossils, which are typically recovered through a process of bulk matrix sampling followed by screen washing through 20 and/or 30 mesh screens. If indicators of potential microvertebrate fossils are found (e. g., plant debris, abundant mollusks, clay clasts, carbonate-rich paleosols, or mudstones) screening of a "test sample" (0.4 cubic yard/meter, ~600 lbs) may produce significant returns and indicate whether or not a larger sample needs to be screen washed. An adequate sample (standard sample) consists of approximately 4.0 cubic yards/meters (6,000 lbs or 2,500 kg) of matrix from each site, horizon, or paleosol. However, the uniqueness of the microvertebrate fossils recovered may justify screen washing even larger amounts. With this possibility in mind, two standard samples (~8.0 cubic yards/meters) or more as determined by the project paleontologist should be collected when the discovery is first made and set aside in case processing of a larger sample is later determined to be necessary. The developer must recognize that funding must be available to process these bulk matrix samples, thereby reducing volume to facilitate cost-effective storage of fossil specimens.

To avoid construction delays, samples of matrix may need to be removed from the project site and processed elsewhere. Chemicals (e. g., detergents, weak acids, orange oil, etc.) may be necessary to facilitate the breakdown of matrix. In some cases the concentrate will need to be further processed using heavy liquids (e. g., zinc bromide, polytungstate, or tetrabromide) to remove mineral grains and create a concentrate enriched with microvertebrate bones and teeth. The concentrate should be directly examined under a microscope to locate and remove individual microfossils.

Samples

To place fossils within a temporal context, dating of rock units may be necessary. If available, samples of volcanic ash and organic carbon should be collected for radiometric and/or thermoluminescence dating.

When appropriate, oriented samples should also be collected for paleomagnetic analysis. In addition, samples of fine-grained matrices should be collected from measured stratigraphic sections for microfossil (e. g., pollen, spores, dinoflagellates, ostracodes, diatoms, foraminifers, etc.) analyses. Other matrix samples may need to be collected and retained with the samples submitted to the repository institution for future analysis, for clast source analysis, or as witness to the source rock unit and possibly for procedures not yet envisioned. The project paleontologist should determine which of these samples should be immediately processed and which samples can be stored for later processing. Many museums will not accept such rock or sediment samples for curation and storage.

Preparation

Salvaged specimens must be prepared for identification and curation (not exhibition). This means removal of all or most of the enclosing sediment to reduce the specimen volume, increase surface area for the application of consolidants/preservatives, provide repairs and stabilization of fragile/damaged areas on a specimen, and allow identification of the fossils. Large specimens may require construction of reinforced plaster or fiberglass cradles. Removal of excess matrix from macrofossils during the preparation process will facilitate identification, reduce storage space, and reduce the cost of storage. Project paleontologists need to be aware that many museums will not accept specimens that are not fully prepared for permanent curation.

Identification and Cataloging

Specimens must be identified by competent qualified paleontological specialists to the lowest taxonomic level possible. Ideally, identification of individual specimens will be to genus and species and to skeletal element. Specimens must be cataloged and a complete list of specimens to be accessioned into the collections must be prepared for the curator of the repository institution. Batch identification and batch numbering (e. g., “mammals, 75 specimens”) is unacceptable.

Analysis

Although academic research questions should dictate the field methods and types of data recorded, the overall goal of a paleontological resource mitigation program is not to conduct research but rather to discover and salvage significant fossil remains, record relevant stratigraphic and taphonomic data, and curate and permanently house the salvaged fossil remains for future study. However, before salvaged specimens are curated, either the project paleontologist or a competent qualified paleontological specialist should determine the significance and importance of the salvaged specimens and this information should be included in the final report.

Storage

Adequate curation and storage of salvaged specimens in an approved repository institution is an essential goal of the paleontological mitigation program. Adequate storage must include curation of individual specimens into the collections of a recognized, not-for-profit repository with a permanent curator, such as a museum or a university (institution). A complete set of GPS data, field notes, photographs, locality forms, and stratigraphic sections must accompany the fossil collections. Specimens must be stored in a fashion that allows retrieval of specific, individual specimens by future researchers.

Specific requirements of the designated repository must be established prior to the start of the project, field salvage work, and laboratory analysis. Adequate advance notice of funds required by the repository for curation is needed for the benefit of project funding. Costs of the project should cover the necessary curatorial supplies such as, but not limited to, trays, vials, foam, and storage cabinets or shelves to provide for the appropriate curation of the specimens.

Reporting

1) Interim report
At the close of the excavation phase of a project, an interim report should be prepared. This interim report should summarize exceptional fossil discoveries, note areas where monitoring occurred and fossils were collected, and list tasks remaining for preparation, identification, and curation of the salvaged specimens. In the interim report, the preconstruction repository agreement should be appended and any additional repository considerations and costs should be described.

2) Final report
After preparation, identification, analysis of significance, and curatorial inventory of the salvaged specimens is complete, a final report must be prepared by the project paleontologist including a summary of the field and laboratory methods, site geology and stratigraphy, faunal/floral list(s), and a brief statement of the significance and relationship of the fossils discovered to similar fossils found elsewhere The final report should emphasize the discovery of any new or rare taxa, or paleoecological or taphonomic significance. A complete set of field notes, geologic maps, stratigraphic sections, and a list of identified specimens must be included in or accompany the final report. This report should be finalized only after all aspects of the mitigation program are completed, including preparation, identification, cataloging, and curatorial inventory.

The final report (with any accompanying documents) and repository curation of specimens and samples constitute the goals of a successful paleontological resource mitigation program. Full copies of the final report should be deposited with both the lead agency and the repository institution with the request that all locality data remain confidential and not made available to the general public.

Compliance
From the beginning of the project, the lead agency should assure compliance with measures to protect fossil resources by:

1. requesting during initial planning phases an assessment and program for impact mitigation that is consistent with these SVP Standard Procedures;

2. ensuring the adequacy of the proposed mitigation measures;

3. acknowledging arrangements for salvaged specimens to be permanently housed in an institutional paleontological repository;

4. ensuring that the paleontological resource mitigation program is supervised by a qualified professional paleontologist;

5. ensuring that all monitoring for paleontological resources is performed by qualified paleontological resource monitors;

6. inspecting the monitoring program in the field periodically during project construction;

7. ensuring that specimens are prepared, identified, cataloged, and properly curated;

8. requiring an interim and final report before issuing final occupancy permits or equivalent documents; and

9. ensuring that the final report is complete and adequately describes the methods and results of the mitigation program.

The project paleontologist should be responsible for:

1. assessing potential impacts to paleontological resources and developing a program for impact mitigation during initial planning phases;

2. obtaining a repository agreement, and ensuring repository acceptance of specimens;

3. ensuring implementation of the mitigation measures; and

4. preparing the interim and final reports.

Acceptance of the final report by the lead agency signifies completion of the program of mitigation for the project. Review and approval of the final report by a qualified professional paleontologist designated by the lead agency will determine the effectiveness of the program and adequacy of the report. Inadequate performances in either area comprise noncompliance, and may result in the lead agency removing the project paleontologist from its list of qualified professional paleontological consultants.

Definitions

A QUALIFIED PROFESSIONAL PALEONTOLOGIST (Principal Investigator, Project Paleontologist) is a practicing scientist who is recognized in the paleontological community as a professional and can demonstrate familiarity and proficiency with paleontology in a stratigraphic context. A paleontological Principal Investigator shall have the equivalent of the following qualifications:

1. A graduate degree in paleontology or geology, and/or a publication record in peer reviewed journals; and demonstrated competence in field techniques, preparation, identification, curation, and reporting in the state or geologic province in which the project occurs. An advanced degree is less important than demonstrated competence and regional experience.
2. At least two full years professional experience as assistant to a Project Paleontologist with administration and project management experience; supported by a list of projects and referral contacts.
3. Proficiency in recognizing fossils in the field and determining their significance.
4. Expertise in local geology, stratigraphy, and biostratigraphy.
5. Experience collecting vertebrate fossils in the field.

PALEONTOLOGICAL RESOURCE MONITORS shall have the equivalent of the following qualifications:

1. BS or BA degree in geology or paleontology and one year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or
2. AS or AA in geology, paleontology, or biology and demonstrated two years experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or
3. Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project.

4. Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques.

ASSOCIATED CRITICAL DATA includes adequate field notes, sketches of stratigraphic sections, geologic maps, and site and specimen photos. Associated critical data may also include samples of organic carbon and volcanic ash for radiometric dating, oriented samples for paleomagnetic analysis, samples for microfossil analysis, and samples for determining the sediment source.

A **PALEONTOLOGICAL REPOSITORY** is a not-for-profit museum or university approved by the lead agency and employing a permanent curator responsible for paleontological records and specimens. Such an institution assigns accession, locality, and/or catalog numbers to individual specimens that are stored and conserved to ensure their preservation under adequate security against theft, loss, damage, fire, pests, and adverse climate conditions. Specimens will be stored in a stable environment away from flammable liquids, corrosive chemicals, organic materials subject to mildew, and sources of potential water damage. Specimens must have all modifications, preparation techniques, etc. documented and linked with the specimen. The repository will also archive lists of collected specimens, and any associated field notes, maps, photographs, diagrams, or other data. The repository must have procedures for tracking specimens removed from storage for study, preparation, exhibit, or loan. The repository must make its collections of cataloged specimens available for study by qualified researchers.

ARCHAEOLOGICAL RESOURCES are human remains and items or artifacts associated with human cultures. If paleontological resources are determined to be in close stratigraphic association with human remains or human manufactured items, or if fossils can be demonstrated to be intentionally modified by humans, they are also considered archaeological resources.

SIGNIFICANT PALEONTOLOGICAL RESOURCES are fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i. e., older than about 5,000 radiocarbon years).

A **LEAD AGENCY** is the agency responsible for addressing impacts to resources that a specific project might cause, and for ensuring compliance with approved mitigation measures.

PALEONTOLOGICAL POTENTIAL is the potential for the presence of significant paleontological resources. All sedimentary rocks, some volcanic rocks, and some low-grade metamorphic rocks have potential to yield significant paleontological resources. Paleontological potential is determined only after a field survey of a rock unit in conjunction with a review of available literature and relevant paleontological locality records.

APPENDIX B

POTENTIAL FOSSIL YIELD CLASSIFICATION

The PFYC follows, and is excerpted directly from BLM IM 2008-009 (2008):

"Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources. However, it is impossible to predict the specific types of fossils that will be found or their exact locations in a geologic formation. Using the PFYC system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions.

The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

Class 1 – **Very Low:** Geologic units that are not likely to contain recognizable fossil remains.

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

(1) Management concern for paleontological resources in Class 1 units is usually negligible or not applicable. (2) Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

The probability for affecting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare.

Class 2 – **Low:** Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils.

- Vertebrate or significant invertebrate or plant fossils not present or very rare.
- Units that are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

(1) Management concern for paleontological resources is generally low. (2) Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

The probability for affecting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

Class 3 or U – **Moderate** or **Unknown:** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.

- Often marine in origin with sporadic known occurrences of vertebrate fossils.
- Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low. (or)
- Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

Class 3 – **Moderate Potential:** Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

Class U – **Unknown Potential:** Units exhibit geologic features and preservation conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this class may eventually be placed in another class when sufficient survey and research is performed. The unknown potential of the units in this class should be carefully considered when developing any mitigation or management actions.

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data. (2) Surface-disturbing activities may require field assessment to determine appropriate course of action.

This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils. Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

Class 4 – **High:** Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface-disturbing activities may adversely affect paleontological resources in many cases.

Class 4a: Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface-disturbing actions. Illegal collecting activities may affect some areas.

Class 4b: These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action. (2) A field survey by a qualified paleontologist is often needed to assess local conditions. (3) Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered. (4) Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

The probability for affecting significant paleontological resources is moderate to high and is dependent on the proposed action. Mitigation considerations must include assessment of the

disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface-disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

Class 5 – **Very High:** Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

Class 5a: Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface-disturbing actions. Unit is frequently the focus of illegal collecting activities.

Class 5b: These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 5 areas is high to very high. (2) A field survey by a qualified paleontologist is usually necessary prior to surface-disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions. (3) Official designation of areas of avoidance, special interest, and concern may be appropriate.

The probability for affecting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface-disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities."

ATTACHMENT 1

PROJECT LOCATION MAP

Figure 1. Mesa 500 kV Substation Project location map.

ATTACHMENT 2

PROJECT GEOLOGY MAPS

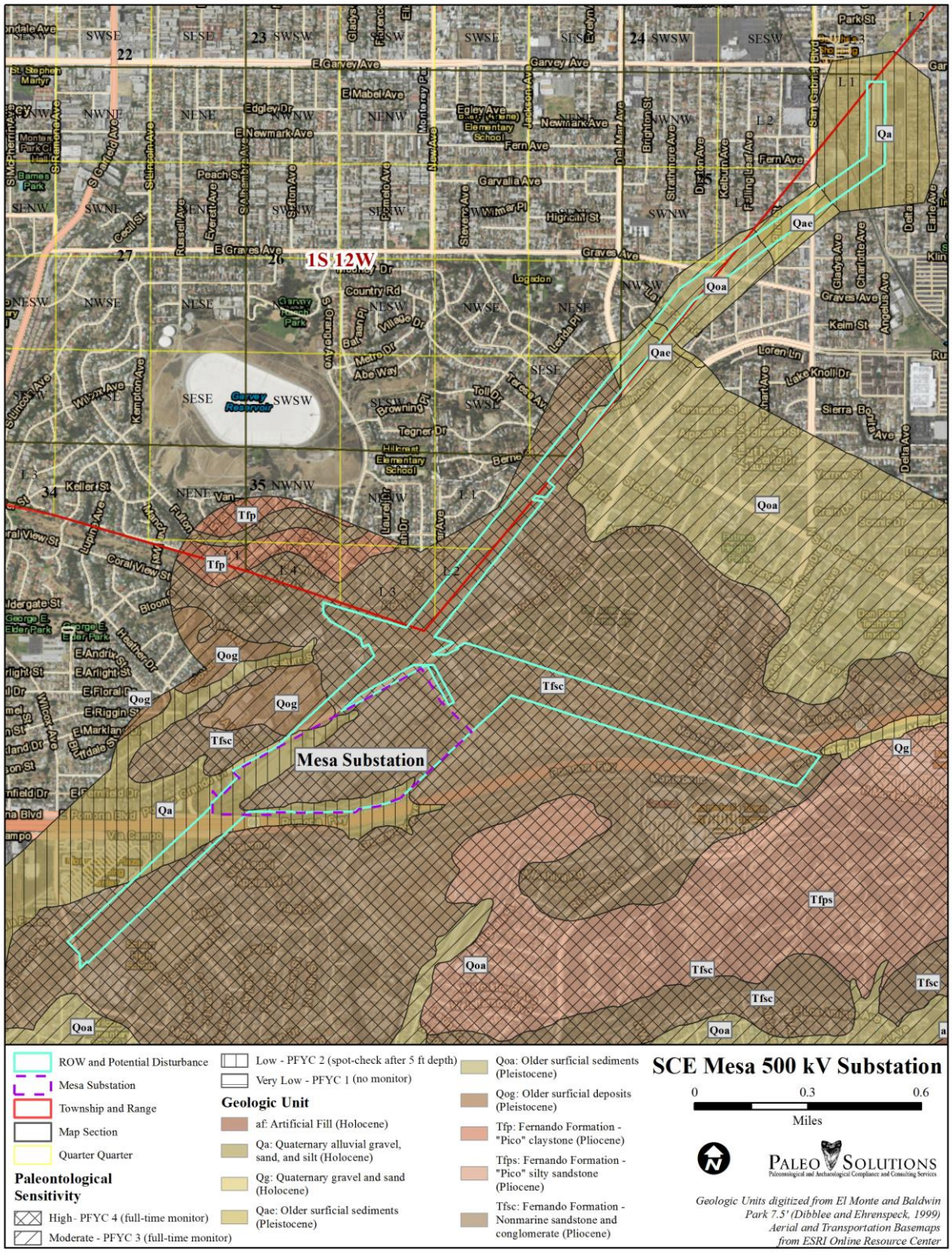

Figure 2. Mesa 500 kV Substation Project geology map.