

## 2 PROJECT DESCRIPTION

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### 2.1 INTRODUCTION

This chapter provides a description of the Revised Project components proposed by SCE, including facilities and equipment, construction methods and schedule, and operations and maintenance, that are different from the project components described in the 2013 RTRP EIR. This chapter does not describe project components that are unchanged from the description in the 2013 RTRP EIR, including Wildlife Substation, the 230-kV transmission line south of Santa Ana River, or the interconnect to RPU's 230/69-kV substation.

The Revised Project elements addressed in this Subsequent EIR are shown in Figure 1.2-3 and include:

- Relocated Overhead 230-kV Double-Circuit Transmission Line<sup>1</sup>
- New Underground 230-kV Double-Circuit Transmission Line
- Distribution Line Relocations
- Etiwanda Marshalling Yard

Appendix A contains detailed project route maps for the entire proposed 230-kV alignment, including the Revised Project components. The Appendix A maps also depict the locations of project work areas such as access and spur roads, stringing sites, work and maintenance pads, marshalling yards, and guard structures.

The description of the Revised Project is based on the SCE application, SCE responses to CPUC deficiency reports (requests for information required to deem the application complete in accordance with GO-131D), and SCE responses to CPUC data requests. These can be found on the CPUC project webpage at:

<http://www.cpuc.ca.gov/environment/info/panoramaenv/RTRP/index.html>

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<sup>1</sup> SCE proposes ~~two~~ double-circuit transmission lines that would be attached to the same set of overhead ~~pole~~ structures, but placed in separate underground duct banks. For the purpose of this Subsequent EIR, the reference is hereafter simplified to “line” (singular). Both lines will be addressed when additional description is warranted.

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### 2.2 REVISED PROJECT COMPONENTS

The revised 230-kV double-circuit transmission line infrastructure components for the overhead and underground segments of the Revised Project are described below and in Table 2.2-1.

**Table 2.2-1 Summary of Revised Project Transmission Infrastructure and Changes from 2013 Project**

Structure	Number	Description	Revised Project Change
<b>Overhead 230-kV Transmission Line (Wineville Avenue and along I-15)</b>			
Lattice Steel Tower (LST)	3	Double-circuit galvanized LSTs with I-string insulators. LSTs would be <del>115 feet and 120 feet tall</del> <u>approximately 120 feet tall</u> .	<p>The proposed 2013 alignment included two LSTs on the east side of Wineville Avenue. The overhead alignment is now proposed on the west side of Wineville Avenue.</p> <p>The 2013 project included a TSP along I-15 where LST JD9A is now proposed, immediately north of the riser poles at Limonite Avenue.</p>
Tubular Steel Pole (TSP)	2	Double-circuit galvanized TSPs with I-string insulators. TSPs would be <del>90 feet and 170 feet tall</del> <u>approximately 120 feet tall</u> .	<p>The proposed 2013 alignment included two TSPs on the east side of Wineville Avenue. The overhead alignment is now proposed on the west side of Wineville Avenue on two TSPs.</p>
<b>New Underground 230-kV Transmission Line</b>			
Riser Poles	4	A dead-end engineered steel pole that has special attachments for transitioning the transmission line conductors from an overhead position into an underground duct bank, and vice versa. The transmission line conductors would run along the outside of the riser pole. A 30-foot-tall shroud made of thick sheet metal would be constructed around the riser pole to provide a protective barrier for the conductor cable at the base of the riser pole. The riser poles would be approximately 165 feet tall and 10 feet in diameter.	<p>The proposed 2013 alignment did not include riser poles because an underground segment was not proposed.</p> <p>Two riser poles would be constructed at the western and eastern end of the underground alignment as part of the Revised Project.</p>
Duct Banks	2	Each duct bank would be 2 miles long and would contain six transmission line conductor cables and three telecommunication cables encased in concrete. Each duct bank substructure would be nearly 4.5 feet wide and 3.5 feet high and would house up to nine 8-inch polyvinyl chloride (PVC) transmission conduits and three 5-inch telecommunication conduits.	<p>The proposed 2013 alignment did not include transmission line duct banks because an underground segment was not proposed.</p> <p>Two underground transmission line duct banks would be constructed predominantly within city streets.</p>

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Structure	Number	Description	Revised Project Change
Vaults	32	Concrete vault structures encasing conductor cable splices. Vaults would be approximately 50 feet long by 8 feet deep and 8 feet wide. Vaults would be spaced in approximately 1,500-foot increments.	The proposed 2013 alignment did not include transmission line vaults because an underground segment was not proposed.  Thirty-two underground transmission line vaults would be constructed along the underground alignment, predominantly within city streets.
<del>Vaults</del>	<del>32</del>	<del>Concrete vault structures encasing conductor cable splices. Vaults would be approximately 50 feet long by 8 feet deep and 8 feet wide. Vaults would be spaced in approximately 1,500-foot increments.</del>	<del>The proposed 2013 alignment did not include transmission line vaults because an underground segment was not proposed.  Thirty-two underground transmission line vaults would be constructed along the underground alignment, predominantly within city streets.</del>

### Relocated Overhead 230-kV Double-Circuit Transmission Line

The Revised Project would include 0.4 mile of overhead 230-kV double-circuit transmission line<sup>2</sup>.

#### Location

The transmission line would begin at the Mira Loma – Vista #1 230-kV Transmission Line at the same location as described in the 2013 RTRP EIR. The overhead 230-kV transmission line would be relocated to the west side of Wineville Avenue between Cantu-Galleano Ranch Road and Landon Drive, instead of on the east side of Wineville Avenue as previously proposed. This rerouting would avoid previous conflicts with new residential developments on the east side of Wineville Avenue. At Landon Drive, the 230-kV transmission line would continue along the proposed 2013 alignment until reaching the north side of Limonite Avenue where the overhead line would transition to an underground position via two riser poles (Figure 2.2-1).

#### Overhead Transmission Line Components

Table 2.2-1 provides information about the overhead transmission line components. The 0.4-mile Revised Project overhead transmission line would consist of two LSTs and two TSPs on concrete bases along Wineville Avenue. The Revised Project would also include a LST north of the riser poles near Limonite Avenue. This structure was proposed as a TSP in the 2013 RTRP

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<sup>2</sup>—~~Alternating current is commonly transmitted in three phases (A, B, and C) of voltage waves. A transmission line circuit consists of three conductor wires; each conductor carries a separate phase of electrical current. A double circuit transmission line consists of six conductor wires (two conductors per phase).~~





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EIR (City of Riverside, 2013). The Revised Project overhead transmission line is shown in Figure 2.2-1. Refer to Figure 2.2-2 and Figure 2.2-3 for diagrams of LSTs and TSPs.

Fiber optic telecommunication lines would be installed on the same overhead structures as the 230-kV transmission line.

### **New Underground 230-kV Double-Circuit Transmission Line**

The Revised Project would include approximately 2 miles of underground 230-kV double-circuit transmission line placed in buried, concrete-encased duct banks. The underground transmission line would include two parallel duct banks that extend the entire length of the underground segment in order to transmit energy from the existing Mira Loma – Vista #1 230-kV Transmission Line down to the proposed Wildlife Substation, and then back up to the Mira Loma – Vista #1 230-kV Transmission Line, effectively creating a loop. Along the underground transmission duct bank, 32 transmission line vaults and 16 telecommunication vaults would be required. Two new riser poles would be constructed at either end of the underground alignment. Riser poles are structures designed to transfer transmission line conductors from an overhead position to an underground position, and vice-versa. Refer to Figure 2.2-4 for a diagram of riser pole structures.

### **Location**

The underground transmission segment would be located within private property and City of Jurupa Valley franchise ROW in local streets (refer to Figure 2.2-5), including Pats Ranch Road and 68th Street.

The 230-kV transmission line would transition underground north of Limonite Avenue via two riser poles, head east for approximately 1,000 feet, and then turn south following Pats Ranch Road to 68th Street. The transmission line would continue underground within 68th Street to Lucretia Street, turn south and continue underground within the Goose Creek Golf Club for approximately 1,000 feet.

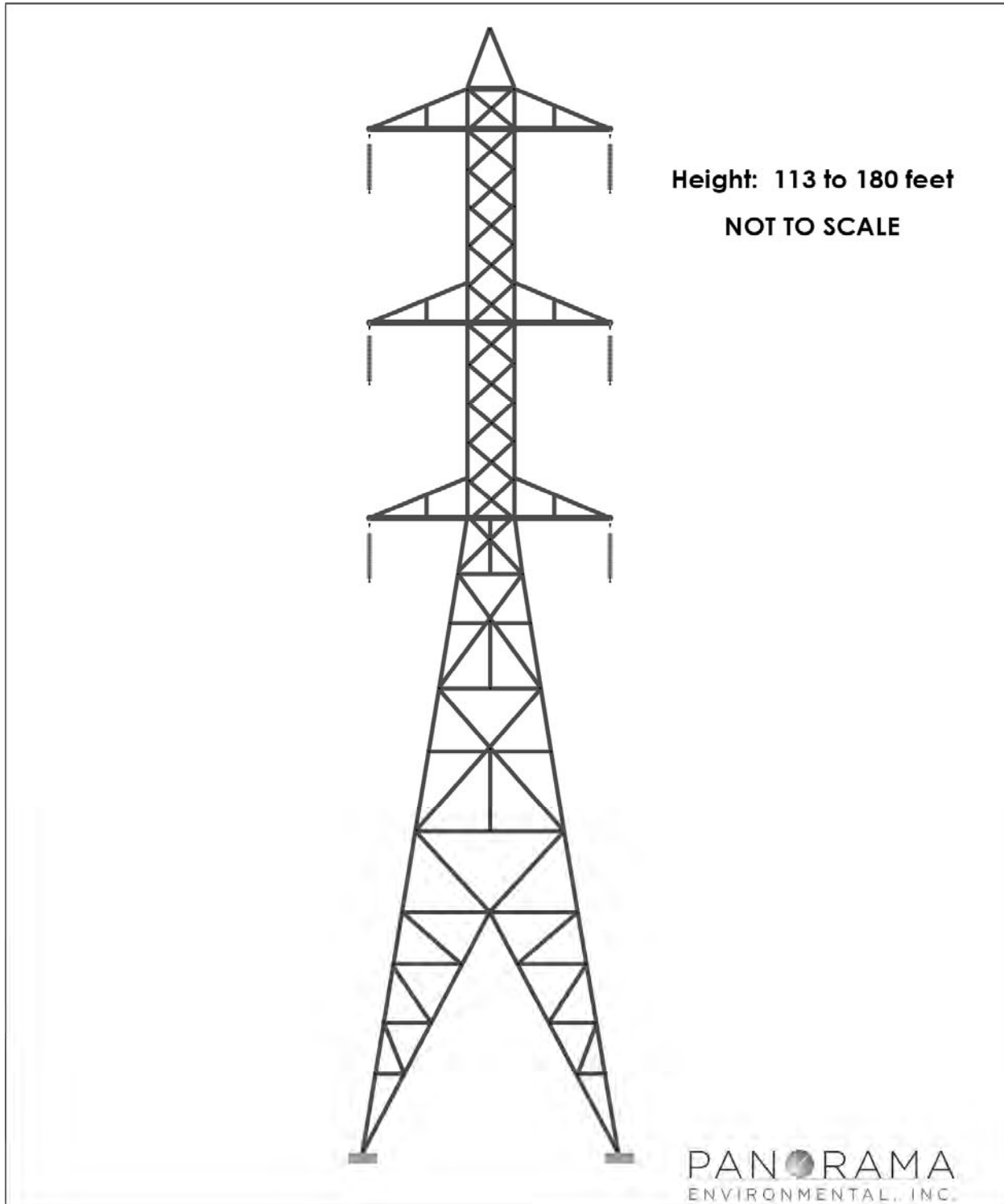
The transmission line would then transition back to an overhead position via two riser poles within the Goose Creek Golf Club. From this point, the 230-kV double-circuit transmission line would follow the originally proposed RTRP route described in the 2013 RTRP EIR along the south side of the Santa Ana River to the proposed Wildlife Substation site; this segment is not part of the Revised Project.

### **Underground Transmission Line Facilities**

The revised 230-kV double-circuit transmission line infrastructure components are summarized in Table 2.2-1. The 230-kV transmission line would be installed in duct bank conduits (i.e., pipes). The duct banks would be located in trenches and backfilled with concrete. Each duct bank would house six conductor cables and three telecommunication fiber optic cables. Figure 2.2-6 shows a typical 230-kV underground duct bank configuration, showing each of the two transmission lines in its own duct bank.

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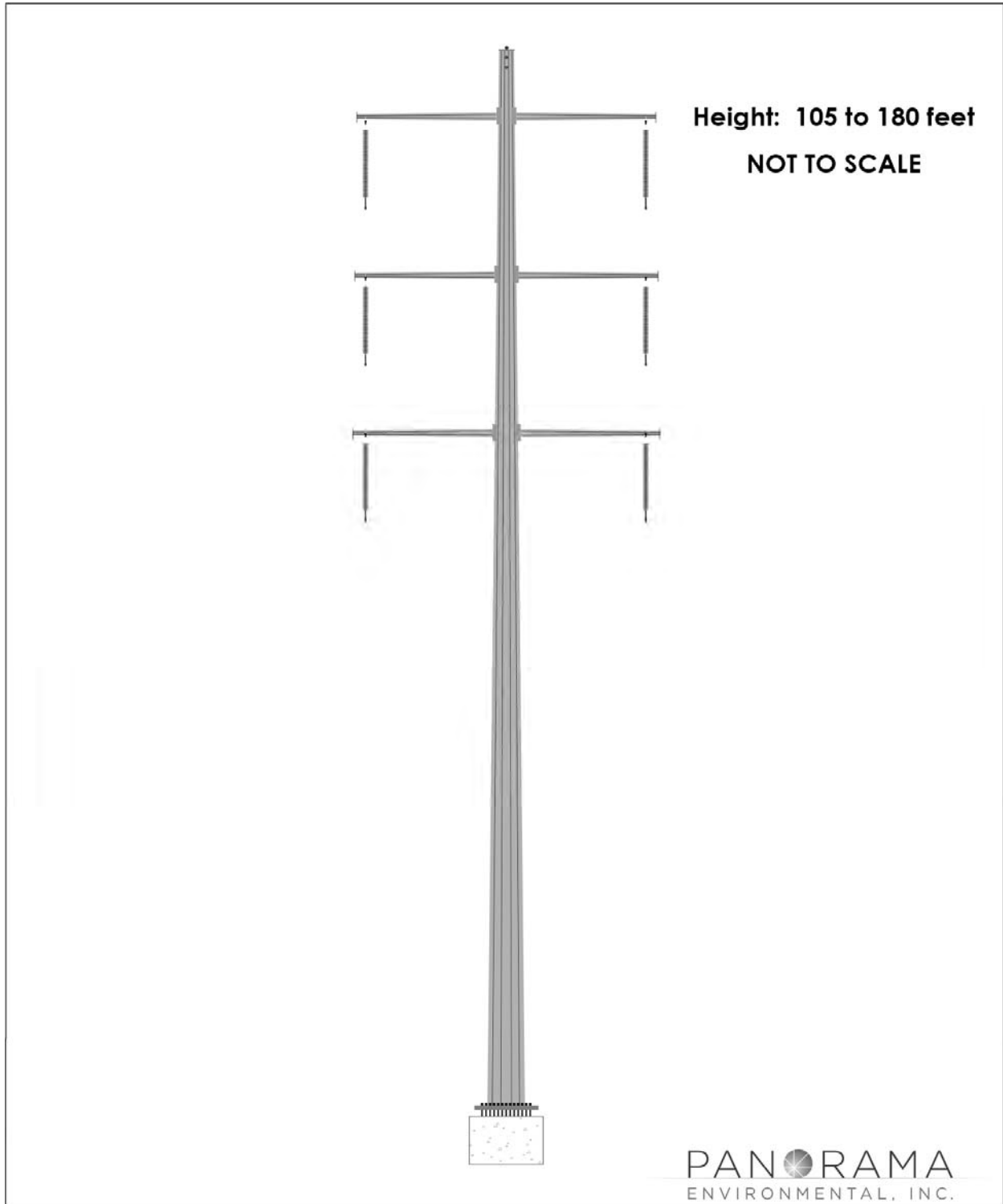
Figure 2.2-2 Typical Lattice Steel Tower



Source: (SCE, 2017b)

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Figure 2.2-3 Typical Tubular Steel Pole

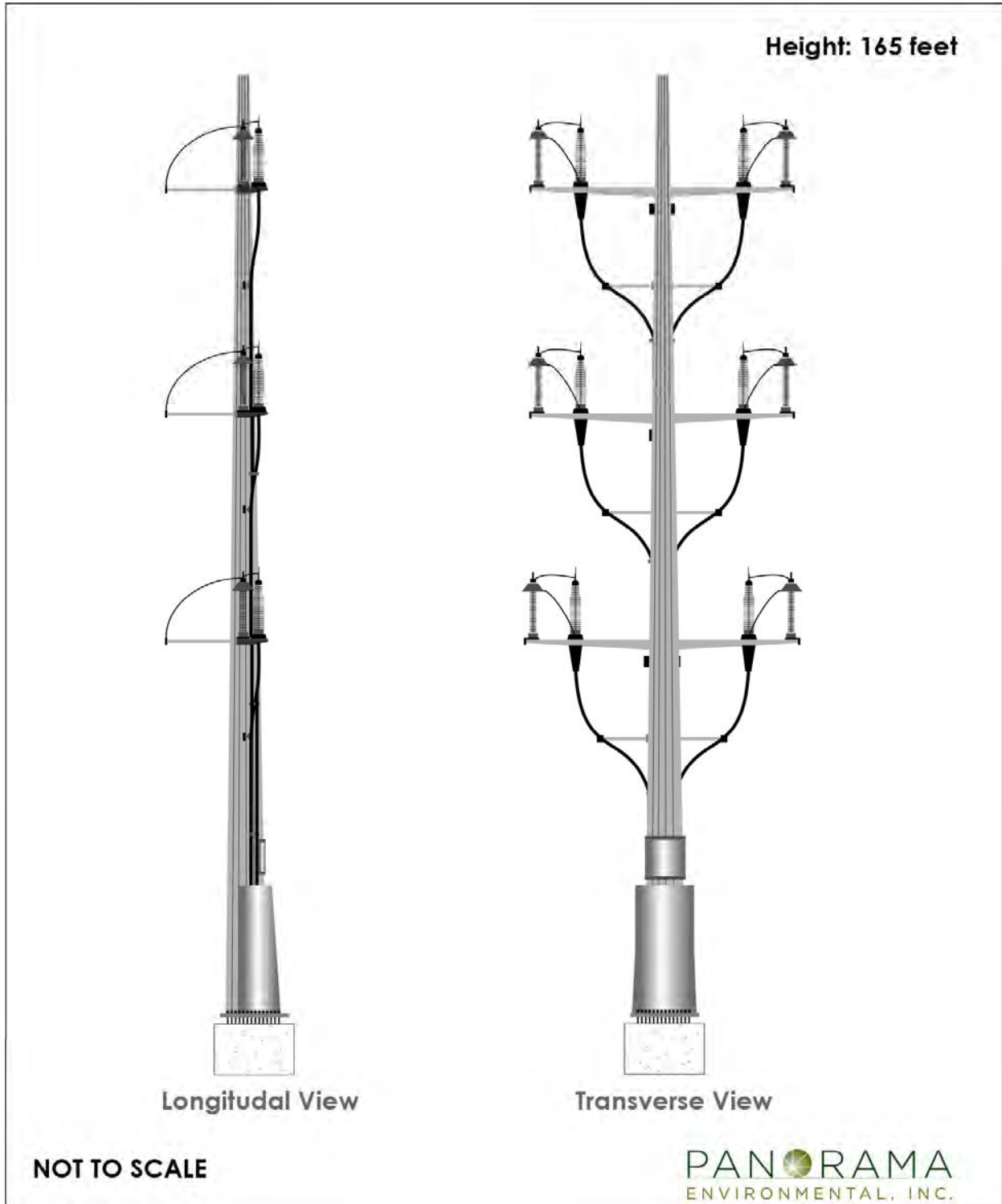


Source: (SCE, 2017b)



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Figure 2.2-4 Typical Transmission Line Riser Pole



Source: (SCE, 2017b)



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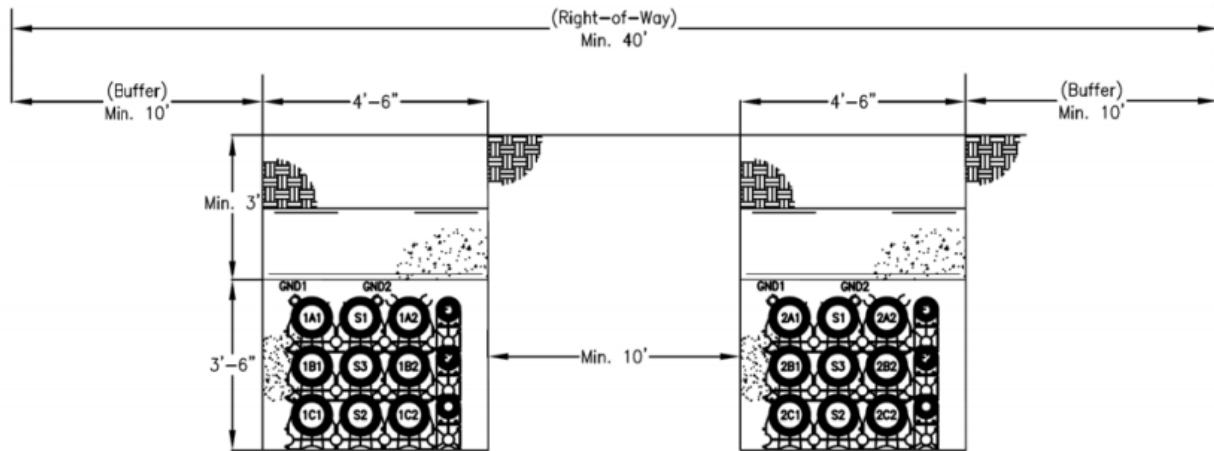
**Figure 2.2-5 Revised Project: New Underground Transmission Duct Bank Alignment**



Source: (Esri, 2017; SCE, 2017a)

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Figure 2.2-6 Typical 230-kV Double-Circuit Underground Duct Bank Configuration



Source: (SCE, 2017b)

### Distribution Line Relocations

The proposed 230-kV transmission line would cross SCE-owned existing low-voltage overhead electrical distribution lines. The locations where the transmission line crosses over the existing distribution line would create clearance or safety issues<sup>3</sup> that could not be addressed through simple realignment of the proposed transmission line; therefore, the existing distribution lines must be relocated or modified to comply with clearance requirements. Distribution line modifications were described and analyzed in the 2013 RTRP EIR. SCE conducted further engineering and design refinements subsequent to publication of the 2013 RTRP EIR, which resulted in additional proposed distribution line modifications at four locations. The additional distribution line modifications are considered part of the Revised Project.

Table 2.2-2 summarizes distribution line modifications. Distribution line modifications are considered in this Subsequent EIR only where modifications would result in an expanded or different footprint from that which was considered in the 2013 RTRP EIR (locations #7 and #8). Distribution Line Relocations #7 and #8 are depicted in Figure 2.2-7.

Distribution Line Relocations #7 and #8 would remove wood poles and install new steel riser poles and underground duct bank on the north side of the Santa Ana River Trail and the north side of the proposed Wildlife Substation, respectively.

<sup>3</sup> Minimum horizontal and vertical clearances between transmission and power lines are required for safety purposes. Contact between two energized lines can result in electrical arcing, which could result in damage to the electrical infrastructure, possible power outages, and potential ignition of nearby vegetation that may lead to a wildfire.

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**Table 2.2-2 Proposed Modifications to Existing Distribution Facilities**

Location	2013 RTRP EIR		Revised Project		Described in 2013 RTRP EIR?
	Modification	Disturbance	Modification	Disturbance	
<b>Location 3:</b> Tower Location at Bellegrave Avenue and I-15	<ul style="list-style-type: none"> <li>Remove overhead distribution lines</li> <li>Install underground distribution lines</li> </ul>	16,215 square feet	<ul style="list-style-type: none"> <li>Remove overhead distribution lines</li> <li>No new wood pole installations</li> </ul>	1,500 square feet	Yes
<b>Location 5:</b> Pedley Substation off Arlington Avenue	<ul style="list-style-type: none"> <li>Relocated existing overhead distribution line to another overhead location. Two proposed modifications</li> </ul>	6,000 square feet	<ul style="list-style-type: none"> <li>Further engineering determined that sufficient clearance can be maintained without relocation/ removal of existing distribution facilities</li> </ul>	N/A	Yes
<b>Location 7:</b> Tower Location West of Rutland Avenue	<ul style="list-style-type: none"> <li>Relocate existing overhead distribution line to another overhead location</li> </ul>	3,750 square feet	<ul style="list-style-type: none"> <li>Remove existing overhead facilities and install the distribution line underground on the north side of the Santa Ana River Trail for approximately 1,000 feet within new ROW                             <ul style="list-style-type: none"> <li>Remove four wood poles and backfill with native soil</li> <li>Remove and replace two existing distribution poles with two new steel distribution riser poles and associated distribution line within existing ROW</li> </ul> </li> </ul>	35,315 square feet	No
<b>Location 8:</b> Wildlife Substation	<ul style="list-style-type: none"> <li>Relocate existing overhead distribution line to another overhead location</li> <li>Install new underground distribution line</li> </ul>	23,065 square feet	<ul style="list-style-type: none"> <li>Remove existing overhead distribution lines and install new underground distribution line for approximately 1,800 feet on the northern side of the proposed 230-kV line within the new ROW                             <ul style="list-style-type: none"> <li>Remove seven wood poles and backfill with native soil</li> <li>Remove and replace two existing wood distribution poles with steel poles and associated distribution line within existing ROW</li> </ul> </li> </ul>	62,415 square feet	No

Sources: (City of Riverside, 2013; SCE, 2017b)



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Figure 2.2-7 Distribution Line Relocations #7 and #8



Sources: (Esri, 2017; SCE, 2017a)

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### 2.3 RIGHT-OF-WAY REQUIREMENTS

A 100-foot-wide easement would be required for the revised overhead 230-kV double-circuit transmission line ROW along the west side of Wineville Avenue, and a 50-foot-wide ROW would be required for the underground 230-kV transmission line route. For underground distribution relocations and telecommunication installations that do not occur within the new transmission ROW, a 15-foot wide easement would be required. Easement width is dictated by maintenance and safety requirements, and for the swing of the conductors caused by wind (sometimes referred to as “blowout”). SCE generally purchases easements from property owners for ROWs. Typically, final ROW determination and the property acquisition process are not initiated until after project approval (City of Riverside, 2013).

### 2.4 CONSTRUCTION ACTIVITIES AND PROCEDURES

This section describes the construction activities associated with installation of the Revised Project components including:

- Summary of Land Disturbance
- Transmission Riser Pole Construction
- Underground Transmission Duct Bank Construction
- Relocation of Distribution Lines
- Temporary Work Areas
- Water Use
- Traffic Management
- Site Cleanup and Waste Disposal
- Site Restoration
- Construction Equipment and Workforce Estimates
- Construction Schedule

The construction activities for the relocated overhead double-circuit transmission line at Wineville Avenue would be consistent with the construction activities and procedures for the overhead double-circuit transmission line described in the 2013 RTRP EIR. For a description of the overhead double-circuit transmission line construction activities and procedures, refer to Section 2.5 of the 2013 RTRP EIR.

#### 2.4.1 Summary of Land Disturbance for the Revised Project

Areas of surface disturbance that would result from construction of the Revised Project are identified in Table 2.4-1 and are described further in the sections below. The maps in Appendix A show the location of land disturbance from construction of the entire Proposed Project included in SCE’s CPCN Application. Areas of temporary disturbance would be restored following construction. Permanent disturbance areas would include permanent project features (e.g., poles and their foundations, spur roads).



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**Table 2.4-1 Areas of Temporary and Permanent Disturbance for Revised Project**

Revised Project Component	Quantity	Disturbance Area (acres) <sup>a, b</sup>		
		Permanent <sup>c</sup>	Temporary <sup>d</sup>	Total Work Area
<b>Overhead 230-kV Transmission Line (Wineville Avenue and along I-15)</b>				
LST Installation	3	0.62	2.13	2.75
TSP Installation	2	0.13	0.79	0.92
<i>Subtotal</i>		0.75	2.92	3.67
<b>Underground 230-kV Transmission Line</b>				
Riser Pole Installation	4	0.30	1.54	1.84
Vault Installation	32	0.04	10.96	11.00
Conduit Duct Bank Installation (open trench)	2 miles	---	14.05	14.05
Jack and Bore (trenchless)	2	---	0.011	0.011
<i>Subtotal</i>		0.34	26.55	26.89
<b>Underground Distribution Lines (Locations 7 and 8)</b>				
Distribution Pole Removal	11	---	0.19	0.19
Riser Pole Installation <sup>e</sup>	4	---	---	---
Vault Installation	2	0.001	0.209	0.21
Conduit Duct Bank Installation	0.5 miles	---	2.11	2.11
<i>Subtotal</i>		0.001	2.509	2.51
<b>Telecommunication Fiber Optic Cables</b>				
Vault Installation <sup>f</sup>	18	0.007	---	0.007 <sup>f</sup>
Conduit Duct Bank Installation <sup>f</sup>	2 miles	---	---	---
<i>Subtotal</i>		0.007	---	0.007
<b>Marshalling Yard</b>				
Etiwanda Marshalling Yard <sup>g</sup>	1	---	---	---
<i>Subtotal</i>		---	---	---
<b>Total</b>		<b>1.10</b>	<b>31.98</b>	<b>33.08</b>

Notes:

- <sup>a</sup> Values are based on preliminary engineering and may change based on final design and construction.
- <sup>b</sup> Overlapping areas were removed to avoid double-counting impact acreage (e.g., if a material storage area or structure access site intersected with a stringing site area).
- <sup>c</sup> Permanent disturbance would only occur in unpaved areas at proposed structure pad locations, manholes, and permanent access and spur roads. A 25-foot radius around each LST and TSP would remain permanently cleared of vegetation.

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Notes continued:

- <sup>d</sup> Temporary disturbance would occur at all other work areas including structure installation and removal sites, line configuration sites, stringing sites, and guard structure sites. Areas within the ROW that may be used as staging areas are already accounted for under the 230-kV Transmission Line. Temporary disturbance areas include existing developed or paved areas within substations.
- <sup>e</sup> TSP riser poles would be placed in locations where existing distribution poles are removed; therefore, there would be no new permanent impact areas. Temporary impact areas for riser pole installation are accounted for in the pole removal disturbance acreage.
- <sup>f</sup> The telecommunications fiber optic cables would be installed at the same time and within the same duct banks as the underground 230-kV transmission lines and the distribution lines. The telecommunication vaults would be installed at the same time as the vaults for the underground 230-kV transmission lines and the distribution lines. As such, the temporary disturbance would not increase.
- <sup>g</sup> The 5.5-acre Etiwanda Marshalling Yard would be located in a previously disturbed area.

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Source: (SCE, 2017b)

### 2.4.2 Transmission Riser Pole Installation

Four riser poles would be required, two at each end of the underground route, to transition the overhead 230-kV transmission line to underground near the park-and-ride on Limonite Avenue and back to an overhead position again in the Goose Creek Golf Club. Riser poles would be spaced approximately ~~150~~ 80 feet apart.

The installation of riser poles would follow the same process as standard TSP installation. A crane would be used for the erection of the riser poles. No helicopter usage is planned for this construction activity. This information supplements the overhead transmission line construction methods provided in Section 2.5.2 of the 2013 RTRP EIR.

### 2.4.3 Underground Transmission Duct Bank Construction

#### Open Trench Construction

Open-trench, concrete-encased duct bank construction would be used for the majority of the underground transmission line installation. Concrete-encased duct banks would be installed for within private property, City of Jurupa Valley franchise ROW (Pats Ranch Road and 68th Street), and the Goose Creek Golf Club. Concrete-encased duct bank installation involves opening several hundred feet of trench at a time and placing conduit ducts into the trench with plastic spacers approximately 10 feet apart to maintain conductor cable spacing. Concrete is then poured around the conduit ducts, and the trench is backfilled with native soil or a special thermal backfill. The excess excavated soil would be trucked to a locally permitted landfill for disposal.

The underground transmission line would require a minimum ROW width of 40 feet to allow appropriate spacing between conduit ducts and from external heat sources. To construct the underground transmission line, a backhoe would excavate two 4.5-foot-wide by 6.5-foot-deep trenches in preparation for duct bank installation. Trenches would be spaced approximately 10 feet apart.

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Each cable pull<sup>4</sup> would be approximately 1,500 feet in length. Vaults would be required for cable pulling and splicing during construction, and manholes would be required along the underground transmission alignment for maintenance and inspection during transmission line operation. Vault construction would require an approximately 52-foot-long by 12-foot-wide by 15-foot-deep excavation. The vault would be lowered into place, the hole would be backfilled with concrete slurry and excavated soil, and soil would be compacted. Manholes would be installed within a 7-foot-long by 7-foot-wide by 9-foot-deep excavation for access to collocated underground telecommunication lines.

A high-density polyethylene smooth-wall innerduct would be used to install the fiber optic cable inside underground duct banks. The innerduct would be installed first inside the conduit duct, and then the fiber optic cable would be installed inside the innerduct.

### Jack and Bore

SCE has not proposed jack and bore, also referred to as horizontal auger boring, but following final engineering jack and bore may be necessary to install duct banks across Limonite Avenue to avoid utilities. Two pits, a sending pit and a receiving pit, would be excavated on either side of Limonite Avenue in Pats Ranch Road. The sending and receiving pit would require excavation of 12-feet-wide by 40-feet-long (CPUC, 2017). Both pits would be approximately 10 to 15 feet deep on either side of the jack and bore operation. Vibratory or impact-driven sheet piles may be used to ensure the stability of the pit walls due to presence of sandy soils. A jacking platform would be installed in the sending pit. The casing would be drilled underneath Limonite Avenue followed by installation of the conduit duct bank into the casing. The length of the trenchless conduit duct bank would be approximately 175 feet.

### 2.4.4 Relocation of Distribution Lines

#### Pole Removal and Installation

Existing wood distribution poles would be removed, and the holes backfilled with native soil. New steel distribution riser poles would be installed at either end of the underground distribution line segment to facilitate the overhead-to-underground transition of the distribution and telecom facilities. Distribution riser poles are depicted in Figure 2.4-1.

#### Underground Distribution Duct Bank

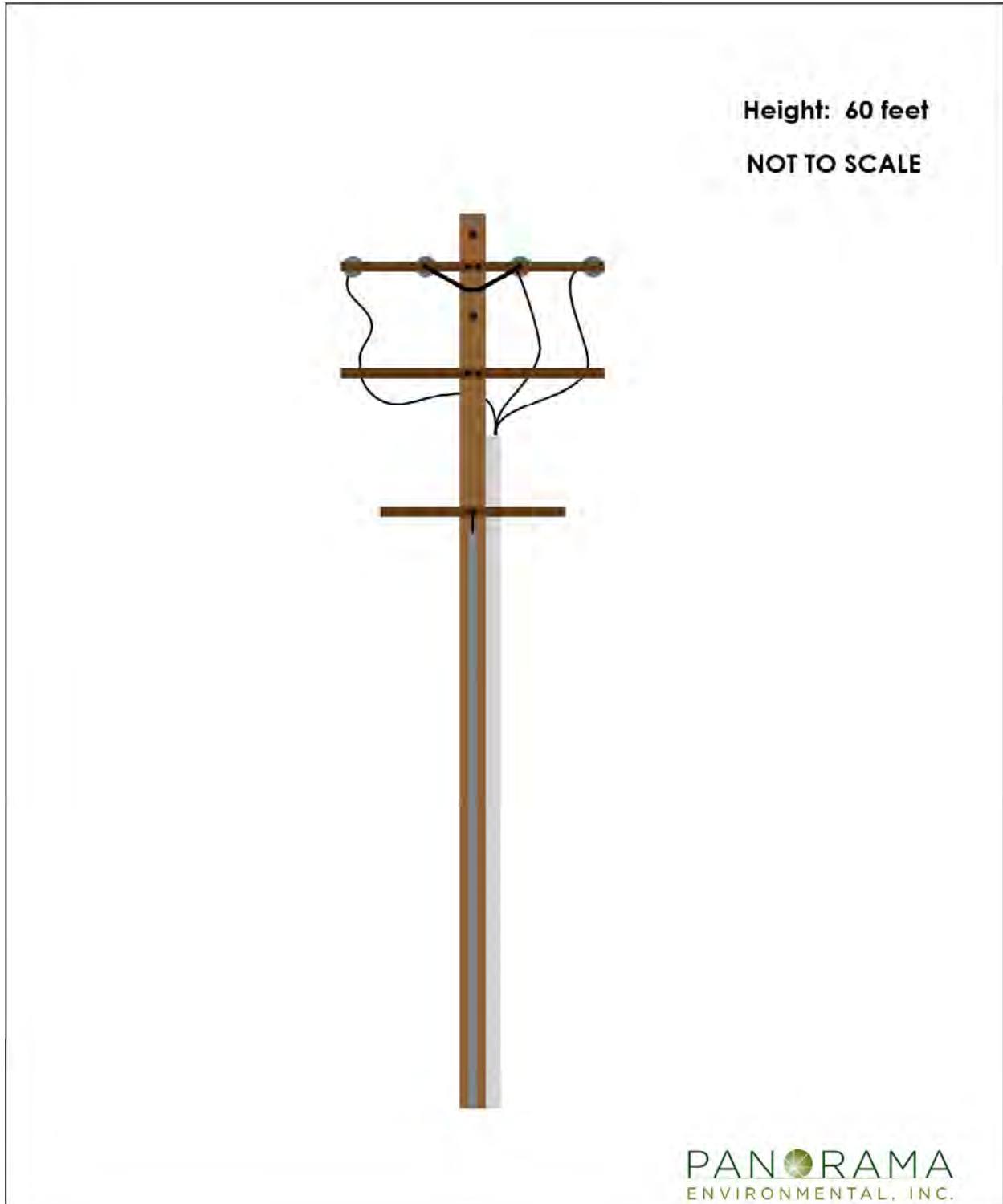
The underground distribution duct bank would be installed in an open trench consistent with SCE's distribution voltage level underground conduit system installation standards (refer to Figure 2.2-7). One 10-foot by 6-foot by 6-foot vault would also be installed for distribution

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<sup>4</sup> A cable pull is the action of pulling the ~~conductor~~ cable between underground vaults on the same circuit. Vaults are spaced approximately 1,500 feet apart. The cable is connected, or "spliced," within the vaults to create a continuous underground cable that extends the entire length of the underground segment.

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Figure 2.4-1 Distribution Line Riser Pole



Source: (SCE, 2017b)

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conduit splicing and access, and a 4-foot-long by 4-foot-wide by 6-foot-deep vault and associated manhole would be installed for access to collocated underground telecommunication lines. Underground distribution cable would be installed to replace the removed overhead conductor. Telecommunication fiber optic cables would also be installed within the same duct bank conduit system. Two 10-foot by 6-foot by 6-foot vaults would also be installed for distribution conduit splicing and access, and two 4-foot by 4-foot-wide by 6-foot-deep vaults and associated manholes would be installed for maintenance access.

### 2.4.5 Temporary Work Areas

SCE would use several types of temporary work areas to construct the Revised Project. Temporary work areas required for the overhead transmission line and distribution pole removals are described in the 2013 RTRP EIR. In addition to the facilities described in the 2013 RTRP EIR, SCE would require one new marshalling yard and new underground construction work areas. These temporary work areas are described below. Temporary work areas for the entire Proposed Project are depicted in the project route maps in Appendix A.

#### Etiwanda Marshalling Yard

SCE identified one new marshalling yard in the Revised Project as a replacement for the 2013 Marshalling Yard 2 site, which has been developed with housing and is no longer available. The Etiwanda Marshalling Yard would be located at the northwest corner of Etiwanda Avenue and Cantu-Galleano Ranch Road. The anticipated use of the Etiwanda Marshalling Yard would be the same as that described in Section 2.5.2 of the 2013 RTRP EIR for Marshalling Yard 2, including:

- Material storage
- Refueling of vehicles
- Routine and major maintenance of construction vehicles and equipment
- Offices for supervisory and clerical personnel
- Reporting location for workers

Preparation of the Etiwanda Marshalling Yard would include application of road base, depending on the existing ground conditions at the yard. Perimeter fencing would be installed to demarcate the yard.

#### Construction Work Areas for the Underground Line Segments

##### Open Trench

Construction of the underground transmission line and distribution line conduit duct banks would require a work area up to 30 feet wide along the length of each duct bank trench. Vault installation would require an approximate 15,000-square-foot work area (up to 100 feet wide by 150 feet long where available space exists) for the transmission line vaults, and up to 4,500 square feet (approximately 150 feet wide by 30 feet long) for distribution line vaults. A portion of the work area would be used for the open trench and placement of excavated material. The rest of the work area would be reserved for haul truck loading. Vehicular traffic would be directed around temporary work areas on roads where underground construction



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would occur or would be temporarily detoured onto adjacent roads. No other construction activity could occur within the transmission vault work area at the same time, due to space and safety constraints.

### Jack and Bore

Jack and bore activities would require an approximate 1,000-square-foot work area (20 feet wide by 50 feet long) for each pit.

### 2.4.6 Water Use

Water use would be on an as-needed basis to apply water to access roads to control fugitive dust during construction, as described in Section 2.5.2 of the 2013 RTRP EIR. Water would be purchased from local, existing water sources and sellers.

### 2.4.7 Traffic Management

The underground transmission segment would be installed primarily in City streets. Construction activities completed within public roadway ROWs would require the use of a traffic control service. All lane and road closures would be conducted in accordance with local ordinances and city permit conditions. Traffic control measures are typically consistent with those published in the 2014 California Joint Utility Traffic Control Manual (Reisner, 2014).

### 2.4.8 Site Cleanup and Waste Disposal

Construction of the Revised Project would result in the generation of various waste materials. All construction materials and debris would be removed from the area and recycled or properly disposed of offsite according to applicable regulations. SCE would conduct a final inspection to ensure that cleanup activities are successfully completed.

Waste materials that can be recycled and salvaged would be gathered by construction crews ~~and separated into roll-off boxes. Salvageable items (e.g., conductor, steel, and hardware) would be transported to the marshalling yards, sorted, baled, and then sold through available markets.~~ Items that may be recycled include: nuts, bolts, washers, and other small hardware; conductor wire; and larger hardware (e.g., shackles, clevises, yoke plates, links, or other connectors used to support the conductor).

Construction waste materials that cannot be reused or recycled include wood, soil, vegetation, and sanitation waste. Refuse and trash would be properly contained and covered. Refuse would be regularly removed from all marshalling yards and staging areas. Local waste management facilities would be used for the disposal of these types of construction waste. All removed treated wood poles would be disposed of as waste pursuant to SCE waste management requirements and applicable regulations. Excavation of trenches would result in excess soil that would be transported off-site in dump trucks to local landfills or authorized disposal sites.

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### 2.4.9 Site Restoration

Disturbed areas within the relocated overhead alignment along Wineville Avenue and the underground duct bank within the Goose Creek Golf Course would be recontoured and re-landscaped to control water and wind erosion. Roadways would be repaved following construction of the underground duct bank. Efforts would be made to restore the land to the original contours and to restore natural drainage patterns along the ROW, as required. EPEs proposed by SCE (refer to Section 2.6 below) contain measures to restore marshalling yards and other temporary work areas to preconstruction conditions. Reseeding and other erosion control may be installed mechanically (e.g., hydroseeding, imprinting, seed drilling) or by hand (e.g., erosion control blankets, jute sandbags).

### 2.4.10 Construction Equipment and Workforce Estimates

The estimated number of personnel and equipment required for construction of each component of the Revised Project are summarized in Table 2.4-2.

Construction of the Revised Project would be performed by either SCE construction crews or contractors, depending on the availability of utility construction personnel at the time of construction. If SCE construction crews are used, they would likely be based out of local facilities within Riverside County. Contractor construction personnel would be managed by SCE construction management personnel.

**Table 2.4-2 Construction Equipment and Workforce Estimates for the Revised Project**

Activity	Workers	Equipment	Quantity	Equipment	Quantity
Survey	4	1-Ton Truck, 4x4	2		
Marshalling Yard	4	1-Ton Truck, 4x4	2	Forklift	1
TSP Foundations	6	Backhoe/Front Loader	1	Water Truck	1
		Medium Crane	1	Concrete Truck	4
		Dump Truck	1	Drill Rig	1
		1-Ton Truck, 4x4	2		
TSP Haul	4	1-Ton Truck, 4x4	1	Flat Bed Truck	1
		Large Crane	1		
TSP Assembly	8	1-Ton Truck, 4x4	2	Forklift	1
		Large Crane	1	Compressor Trailer	1
TSP Erection	8	Compressor Trailer	1	Manlift/Bucket Truck	2
		1-Ton Truck, 4x4	2	Crane	1
LST Foundations	7	1-Ton Truck, 4x4	2	Dump Truck	1
		Crane/Boom Truck	1	Water Truck	1

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Activity	Workers	Equipment	Quantity	Equipment	Quantity
		Backhoe/Front Loader	1	Drill Rig	1
		Concrete Truck	3		
LST Steel Haul	4	1-Ton Truck, 4x4	1	Flat Bed Truck	1
		Fork Lift	1		
LST Steel Assembly	10	¾ -Ton Pick-up Truck, 4x4	2	Large Crane	1
		1-Ton Truck, 4x4	3	Compressor Trailer	1
		Crane	1		
LST Erection	12	Large Crane	1	Compressor Trailer	1
		1-Ton Truck, 4x4	4	Crane	1
Conductor Installation	28	1-Ton Truck, 4x4	6	Forklift	1
		Manlift/Bucket Truck	4	Spacing Rig	1
		Crane/Boom Truck	2	Spacing Cart	6
		Medium Crane	2	Backhoe/Front Loader	1
		Dump/Stake Bed Truck	1	Sag Cat with Winches	2
		Wire Truck/Trailer	2	Water Truck	1
		Sock Line Puller	1	Lowboy Truck/Trailer	2
		Bull Wheel Puller	1	Hughes 500E Helicopter	1
		Tensioner	1	Helicopter Support Truck	1
Underground Vault Installation	20	1-Ton Truck, 4x4	4	Backhoe/Front Loader	2
		Excavator	2	Dump Truck	6
		Water Truck	2	Large Crane	2
		Concrete Truck	12	Flat Bed Truck	6
		Lowboy Truck/Trailer	2	Pile Driver	1
Duct Bank Installation (open trench)	20	1-Ton Truck, 4x4	4	Compressor Trailer	2
		Backhoe/Front Loader	2	Excavator	2
		Dump Truck	6	Pipe Truck/Trailer	2
		Water Truck	2	Concrete Truck	8
		Lowboy Truck/Trailer	2	Pile Driver	1

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Activity	Workers	Equipment	Quantity	Equipment	Quantity
Jack and Bore (trenchless)	<b>19</b>	1-Ton Truck, 4x4	4	Flat Bed Material Truck	1
		Vibratory Sheet Pile Driver	1	Paver	1
		Bore/Drill Rig	1	Compaction Roller	1
		Dump Truck	1	Backhoe/Front Loader	1
		Excavator	1		
Underground Cable Installation	<b>10</b>	1-Ton Truck, 4x4	2	Puller	1
		Cable Dolly/Truck	1	Flat Bed Material Truck	1
		Large Crane	1	Forklift	1
Cable Splicing	<b>16</b>	1-Ton Truck, 4x4	4	Splicing Truck/Trailer	2
		Flat Bed Material Truck	2		
Riser Pole Preparation	<b>5</b>	1-Ton Truck, 4x4	2	Flat Bed Material Truck	2
Cable Terminating	<b>8</b>	1-Ton Truck, 4x4	2	Flat Bed Material Truck	1
		Large Crane	1	Forklift	1
Trench Restoration/Paving	<b>6</b>	1-Ton Truck, 4x4	2	Skip Loader	1
		Dump Truck	2	Bobcat	1
		Compaction Roller	1		
Restoration	<b>7</b>	1-Ton Truck, 4x4	2	Water Truck	1
		Backhoe/Front Loader	2	Drum Compactor	1
		Motor Grader	1	Lowboy/Truck/Trailer	1
Distribution Relocation (Civil)	<b>7</b>	1-Ton Truck, 4x4	1	Lowboy Truck/Trailer	1
		Backhoe/Front Loader	1	Water Truck	1
		Dump Truck	1	Concrete Truck	1
		Compaction Roller	1		
Distribution Relocation (Electrical)	<b>7</b>	1-Ton Truck, 4x4	1	Line Truck	1
		Rodder Truck	1	Boom/Crane Truck	1
		Cable Dolly/Truck	1	Troubleman Truck	1
		Reel Truck	1		

Sources: (City of Riverside, 2013; SCE, 2017b; EBMUD, 2016)

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### 2.4.11 Preliminary Construction Schedule

SCE anticipates that construction of the Proposed Project would begin in 2021 and last approximately 26 months, ending in 2023. Construction would commence following CPUC and regulatory agency approval, final engineering, and procurement activities. The Revised Project would include LST, TSP, and riser pole construction and installation, and underground construction activities. ~~Error! Reference source not found. Table 2.4-3~~ provides the anticipated construction durations for individual Revised Project construction activities.

**Table 2.4-3 Estimated Duration of Construction Activities**

Activity	Estimated Duration
Survey	11 days <sup>a</sup>
Marshalling Yard	26 months <sup>a</sup>
TSP (foundation, haul, assembly, erection)	1 month <sup>b</sup>
LST (foundation, haul, assembly, erection)	1 month <sup>b</sup>
Conductor Installation	3 days
Riser Pole Preparation <sup>c</sup>	3 months
Underground Vault Installation	8 months
Underground Duct Bank Installation (open trench)	4 months
Jack and Bore (trenchless)	1 month
Underground Cable Installation	3.5 months
Trench Restoration/Paving	1 month
Cable Splicing	5 months
Cable Terminating	4 months
Underground Trench Restoration	2.5 months

Notes:

<sup>a</sup> Total estimated duration for the Proposed Project, including the Revised Project.

<sup>b</sup> LSTs and TSPs are constructed on concrete foundations. The foundations require approximately 20 days of "cure time" that is not reflected in the construction duration. LST and TSP construction cannot occur until the foundations have cured.

<sup>c</sup> Riser poles are TSPs and would require the same foundation, haul, assembly, and erection construction time.

Source: (SCE, 2016)

Construction activities would generally be scheduled during daylight hours: 6:00 am to 6:00 pm (June to September), and 7:00 am to 6:00 pm (October to May), Monday through Friday. In the event construction activities would need to occur outside these timeframes, SCE would obtain a noise variance from the Cities of Jurupa Valley or Riverside, as necessary. Supplemental temporary lighting may be required outside of daylight hours to allow for the completion of work tasks and daily cleanup as well as for safety. Temporary lighting units would be in operation to provide workers with a minimum level of illumination to allow the safe



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completion of their work. All Except for vaults, materials associated with construction efforts would be delivered by truck to established marshalling yards. Vaults may be directly delivered from manufacturers' facilities to their planned installation locations. Delivery activities requiring major street use, including possible traffic interruptions, would be scheduled to occur during off-peak traffic hours.

### 2.5 OPERATION AND MAINTENANCE

The Revised Project would not require any personnel during operation of the new transmission facilities. Inspection and maintenance of the Revised Project overhead alignment would involve periodic inspections by SCE personnel as described in Section 2.6 of the 2013 RTRP EIR. Maintenance of the 230-kV transmission line would be performed on an as-needed basis and could include replacement of equipment, maintenance of access roads and erosion control measures.

#### 2.5.1 Underground Transmission Line Inspections

The underground vaults would be routinely inspected to ensure structural integrity of the conductor cable system and vaults. Qualified electricians would periodically perform routine testing and check on the condition of the voltage-limiting arresters, grounding connection, splices, terminations, lightning arrestors, and conductor.

SCE anticipates that annual inspections of the cable and splices will be performed during the first 5 years after energizing the underground circuit, after which the inspection cycles may be extended to every 2 or 3 years. These inspections would require localized lane closures when vault lids are located on public roads, with likely durations of approximately 5 hours per location. When feasible, inspection of immediately adjacent vaults could occur during the same lane closure occurrences. One or two vehicles would be needed to conduct inspections.

#### 2.5.2 Vegetation Management

##### Overhead Alignments

California PRC § 4293 and CPUC GO 95, Rule 35 require clearance between conductors and vegetation. For transmission lines, a 10-foot clearance between the overhead conductor and vegetation would be maintained at all times and in all conditions (i.e., sway, sag, etc.) per PRC § 4293. CPUC GO 95, Rule 35 requires that 18 inches of clearance be maintained at all times for all overhead distribution lines. SCE anticipates trimming vegetation to these required minimum clearances, plus an amount equal to 1 year of additional growth. All vegetation would be removed mechanically; the use of herbicides is not anticipated.

##### Underground Alignments

Herbaceous vegetation would be allowed to grow over unpaved portions of the underground alignment, consistent with PRC and GO requirements. Deep-rooted vegetation, including trees, would be removed and prevented from establishing over the underground duct banks. The

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setback buffer area required between deep-rooted landscape items and the underground duct bank is 10 feet, including any trees beyond 10 feet that have overhanging canopy cover.

### 2.6 ENVIRONMENTAL PROTECTION ELEMENTS AND MITIGATION MEASURES

SCE employs best management practices (BMPs) and EPEs to minimize potential impacts on the environment. The 2013 RTRP EIR lists the EPEs and mitigation measures applicable to the SCE portion of the RTRP. The EPEs and mitigation measures were approved when the City of Riverside adopted the 2013 Final RTRP EIR. Applicable RTRP EPEs and mitigation measures included in the 2013 RTRP EIR would be implemented for the Revised Project. For the purposes of assessing potential impacts of the Revised Project, approved EPEs and mitigation measures are referenced, where appropriate, in Chapter 4: Environmental Analysis of this Subsequent EIR. New mitigation measures are introduced in instances where existing mitigation would not be sufficient to reduce impacts of the Revised Project to a less-than-significant level.

### 2.7 ELECTRIC MAGNETIC FIELDS

The CPUC does not consider EMF to be an environmental issue in the context of CEQA because (1) there is no agreement among scientists that EMF creates a potential health risk, and (2) CEQA does not define or adopt standards for defining any potential risk from EMF.

#### 2.7.1 CPUC EMF Guidelines

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures or regulations.

The CPUC has implemented decision (D.93-11-013) that requires that utilities use “low-cost or no-cost” mitigation measures for facilities requiring certification under GO 131-D.4. This decision directed the utilities to use a 4 percent benchmark on the low-cost mitigation. This decision also implemented a number of EMF measurement, research, and education programs. The CPUC did not adopt any specific numerical limits or regulation on EMF levels related to electric power facilities.

In Decision D.93-11-013, the CPUC addressed mitigation of EMF of utility facilities and implemented the following recommendations:

- No-cost and low-cost steps to reduce EMF levels
- Workshops to develop EMF design guidelines
- Uniform residential and workplace programs
- Stakeholder and public involvement
- A 4-year education program
- A 4-year non-experimental and administrative research program

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- An authorization of federal experimental research conducted under the National Energy Policy Act of 1992

Most recently the CPUC issued Decision D.06-01-042, on January 26, 2006, affirming the low-cost/no-cost policy to mitigate EMF exposure from new and upgraded utility power line, transmission line and substation projects. This decision also adopted rules and policies to improve utility design guidelines for reducing EMF. The CPUC stated, “at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences.” At this time, the CPUC has not implemented a general requirement that utilities include non-routine mitigation measures, or other mitigation measures that are based on numeric values of EMF exposure and has not adopted any specific limits or regulation on EMF levels related to electric power facilities. Measures to mitigate EMF may be determined on a project-by-project basis by the CPUC.

Recognizing that there is a great deal of public interest and concern regarding potential health effects from exposure to EMFs from power lines, additional information regarding EMF associated with electric utility facilities and the potential EMF resulting from the Proposed Project is presented in Appendix C. EMF information is presented for the benefit of the public and decision makers, but is not considered within the context of CEQA.

Other concerns related to power line<sup>5</sup> fields include nuisance (corona and audible noise; radio, television, and electronic equipment interference) and potential health risk impacts (induced currents and shock hazards, and effects on cardiac pacemakers). Not all of these concerns are CEQA considerations. The effects of audible corona noise are evaluated in Section 4.10: Noise of this Subsequent EIR, and induced current health risks are discussed in Section 4.6: Hazards and Hazardous Materials. Environmental impacts are defined for these issues, and mitigation measures are recommended when necessary. Other potential AC interference concerns (e.g., radio, television, and electronic equipment interference) are presented in Appendix C for informational purposes only.

### 2.8 REFERENCES

City of County of San Francisco. (2013, March). San Francisco Groundwater Supply Project Draft EIR. *State Clearinghouse No. 2009122075*.

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<sup>5</sup> The term “power line” in this section refers generally to electric lines of all voltage classes operating in SCE's electric system. However, CPUC GO 131-D distinguishes between transmission lines (“designed to operate at or above 200 kilovolts [kV]”), power lines (“designed to operate between 50 and 200 kV”), and distribution lines (“designed to operate under 50 kV”).

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