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CHAPTER 3 – PROJECT DESCRIPTION

3.0 Project Location and Overview

SDG&E is a regulated public utility that provides electric service to 1.4 million customers within a 4,100-square-mile service area, spanning parts of two counties and 25 cities in the San Diego area. The Proposed Project includes the construction of a new substation and associated 69-kV power lines. The primary objectives of the Proposed Project are to provide additional capacity to serve existing area load and future customer-driven electrical load growth, and to enhance the distribution and power network to minimize potential for long-term outages or service disruptions to existing customers in the SDG&E southeastern Chula Vista service territory.

The Proposed Project is located in southwestern San Diego County. The proposed Salt Creek Substation site, the power tie-line (TL) 6910 loop-in, and the majority of TL 6965 are located in the eastern portion of the City of Chula Vista, California. A small segment (approximately 4,700 linear feet) of the northernmost portion of TL 6965 is located in an unincorporated portion of San Diego County on SDG&E fee-owned land surrounding the Existing Miguel Substation (herein referred to as the Existing Substation). The Existing Substation is on SDG&E fee-owned land in unincorporated San Diego County.

The majority of the Proposed Project is located east of SR-125, in the southwesterly portion of San Diego County; refer to Figure 3-1, Regional Map; Figure 3-2, Vicinity Map; and Figure 3-3, Project Overview. A small segment (approximately 6,100 linear feet) of the proposed TL 6965 is located on the west side of SR-125, with two overhead crossings over SR-125. The Proposed Project area is situated approximately 15 miles southeast of downtown San Diego and 5 miles north of the international border with Mexico.

The Proposed Project includes the following primary components:

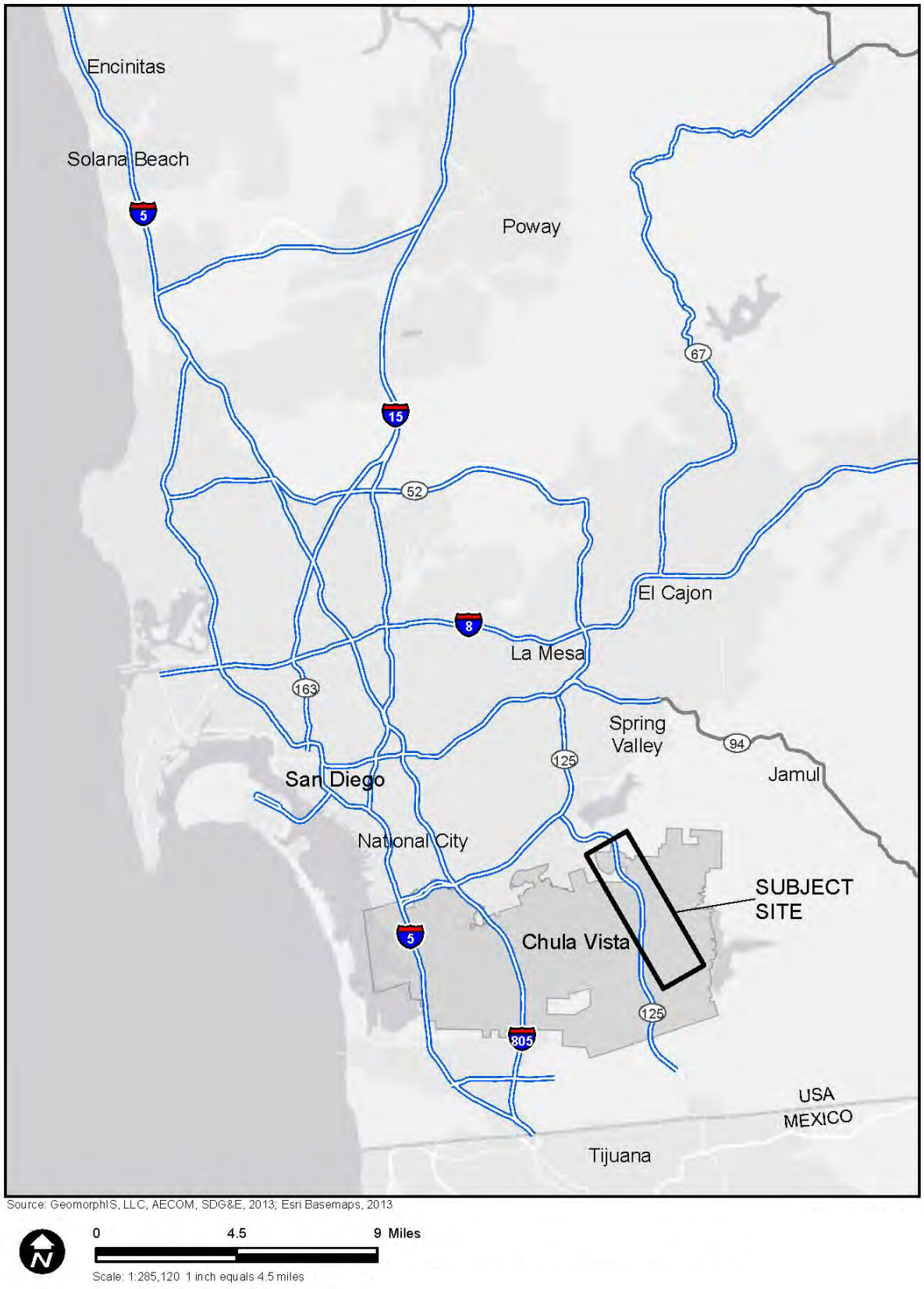
- Salt Creek Substation: Construction and operation of a new 120-MVA 69/12-kV substation, known as Salt Creek Substation, including construction and operation of underground 12-kV distribution circuits on 11.64 acres of undeveloped land.

- TL 6965: Construction and operation of a 5-mile-long 69-kV power line (TL 6965) within the existing Transmission Corridor, from the Existing Substation to the proposed Salt Creek Substation. The majority of TL 6965 would be located above ground; the final 1,000 linear feet in the vicinity of the Salt Creek Substation would be installed underground.

- TL 6910 Loop-In: Construction and operation of an underground 69-kV power line loop-in (TL 6910) to the proposed Salt Creek Substation. Trench installation would total approximately 1,000 linear feet from the cable pole to the substation terminal equipment.

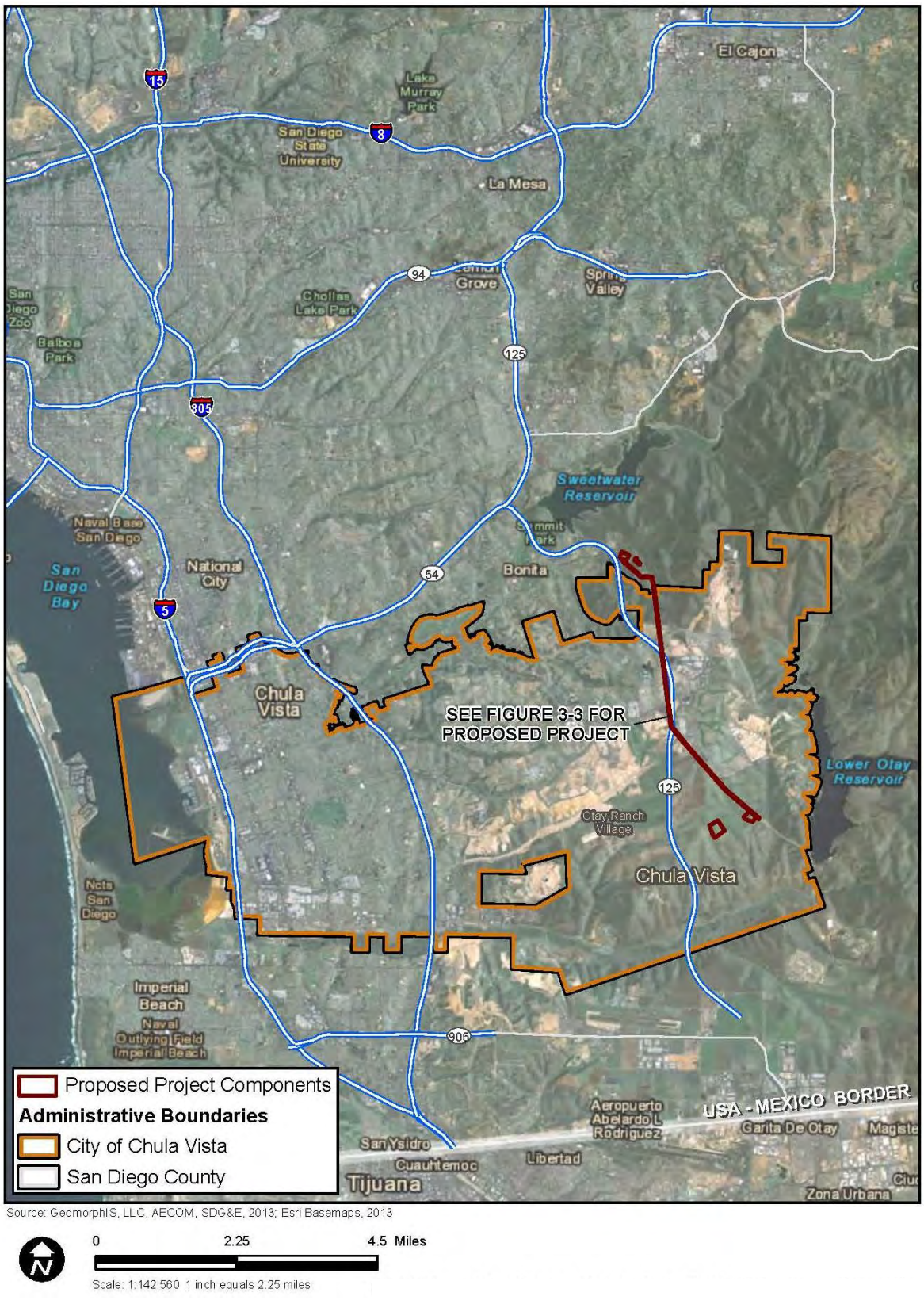
- Existing Substation Modifications: Installation of a new 69-kV power line position at the Existing Substation to connect to TL 6965.

Figure 3-1: Regional Map



Note: SDG&E is providing this map with the understanding that the map is not survey grade.

Figure 3-2: Vicinity Map



Note: SDG&E is providing this map with the understanding that the map is not survey grade.

The locations of these components based on the preliminary design, along with the staging yards necessary for construction of these components, are described in greater detail in Section 3.4, Project Components, and are shown in Figures 3-4 and 3-4A through 3-4D, Key Map and Transmission Corridor Route Maps, and Figure 3-5, Salt Creek Substation Layout. Typical drawings of the types of structures to be installed are included in Appendix 3-A; detailed route maps are included in Appendix 3-B.

3.0.1 Salt Creek Substation

The proposed Salt Creek Substation site is located adjacent to and southeast of Hunte Parkway, where SDG&E's Transmission Corridor crosses Hunte Parkway. The proposed Salt Creek Substation site consists of 11.64 acres of undeveloped land, as shown in Figure 3-3, Project Overview. The substation pad would be approximately 45 to 50 feet below the general Hunte Parkway elevation.

3.0.1.1 Distribution

The underground distribution circuits would be located within the proposed Salt Creek Substation site; therefore, throughout this PEA document, underground distribution circuits are discussed in association with the proposed Salt Creek Substation.

The ultimate conduit facility would be installed underground in the improved substation access road from the proposed Salt Creek Substation up to the manhole/vault installation located in the Hunte Parkway public ROW. Three distribution circuits would be installed underground in the conduit facility. Distribution circuits would then be extended from these vaults, known by SDG&E Distribution as manholes, to tie in to existing distribution circuits, also located in existing public ROW, consistent with SDG&E's franchise agreement with the City of Chula Vista. Refer to Appendix 3-A.

3.0.2 TL 6965

A new overhead 69-kV power line, approximately 5 miles long, would be constructed from the Existing Substation and extending southerly to the proposed Salt Creek Substation, as shown in Figure 3-3, Project Overview. The northernmost 4,700 linear feet would be located on SDG&E's fee-owned property in an unincorporated portion of San Diego County. The remainder of the power line would be constructed overhead within SDG&E's existing 120-foot-wide Transmission Corridor within the City of Chula Vista, where it would terminate on a new cable pole located approximately 1,200 feet southeast of Hunte Parkway. The final approximately 1,000-foot-long segment of TL 6965 would be undergrounded from the cable pole to the substation rack.

Seven existing structures along a portion of TL 643 and one existing structure on TL 6910, which are located on SDG&E's Existing Substation property, would be used to complete the TL 6965 connection to the Existing Substation. Pole-top work would be required to add insulators and conductors to connect TL 6965.

Figure 3-3: Project Overview

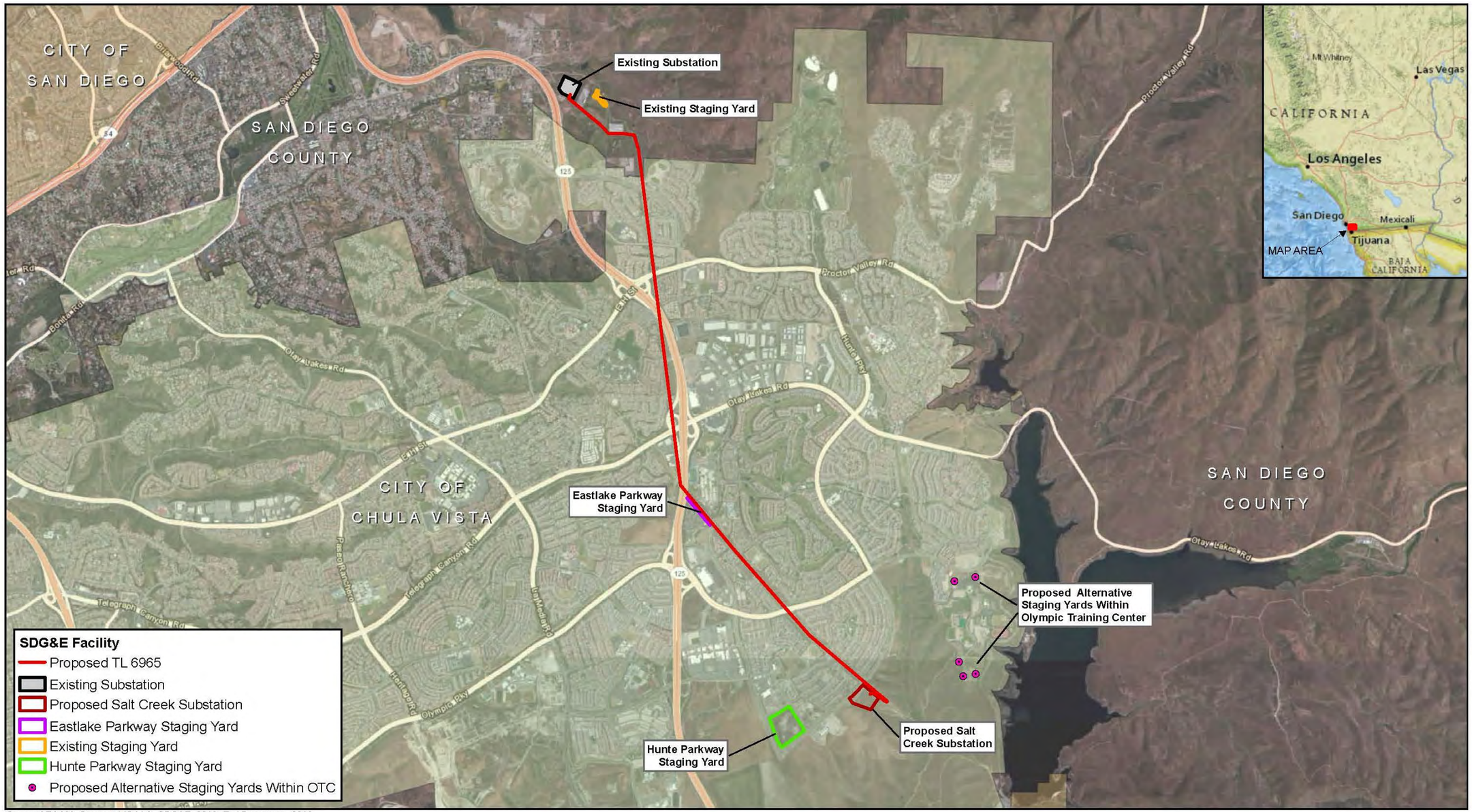


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Figure 3-4: Transmission Corridor Key Map

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Figure 3-4A: Transmission Corridor Route Map

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Figure 3-4B: Transmission Corridor Route Map

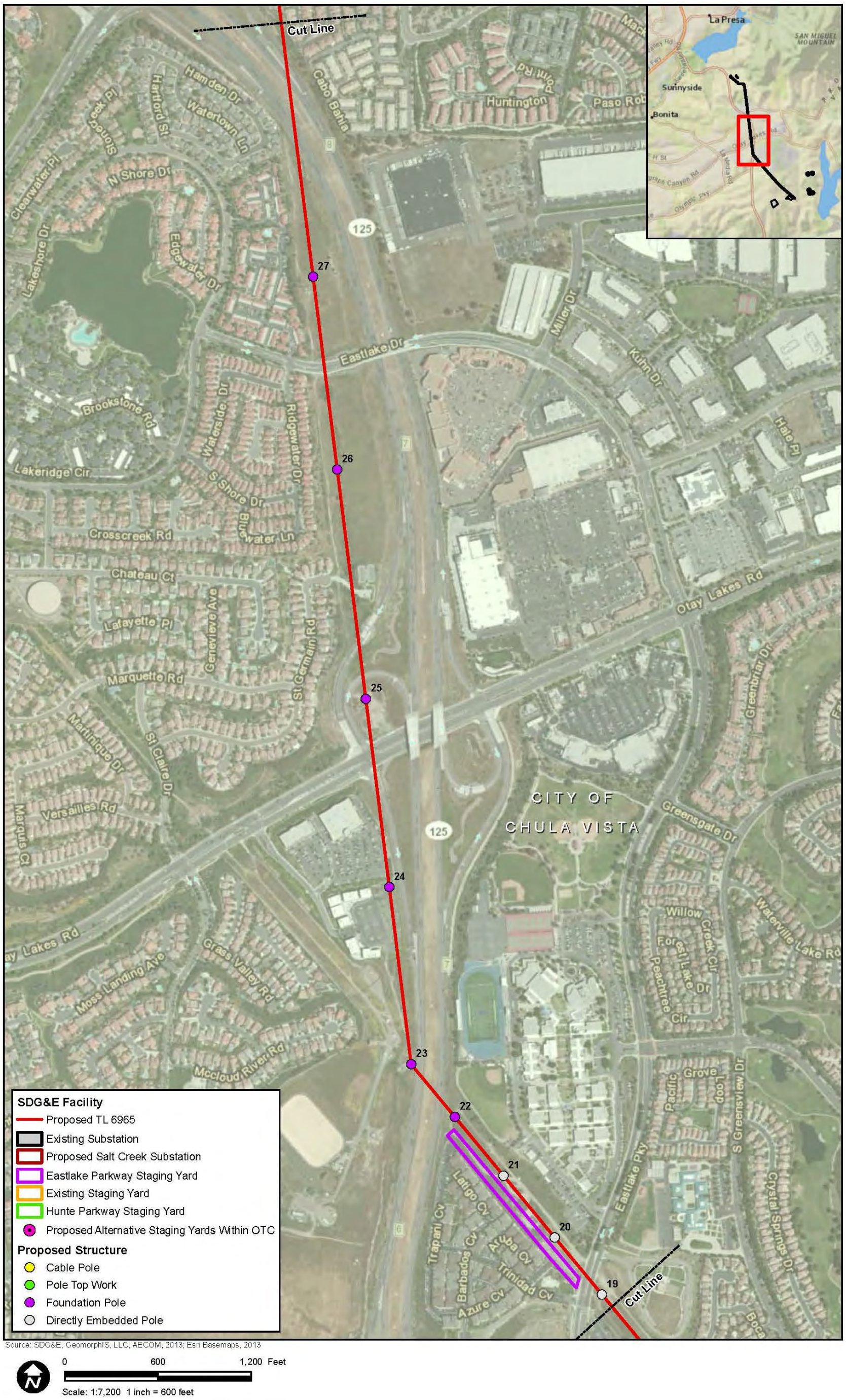

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Figure 3-4C: Transmission Corridor Route Map

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Figure 3-4D: Transmission Corridor Route Map

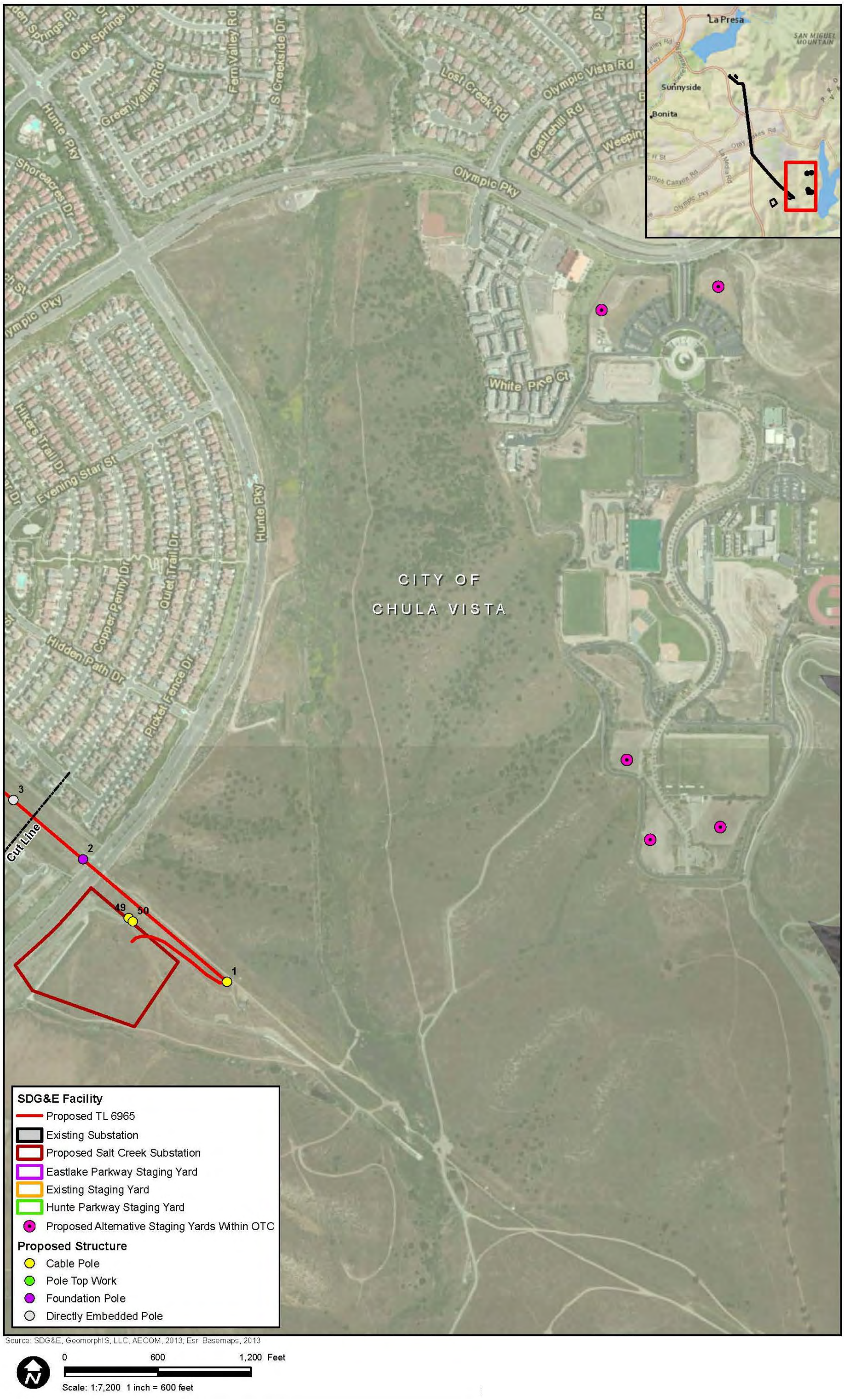

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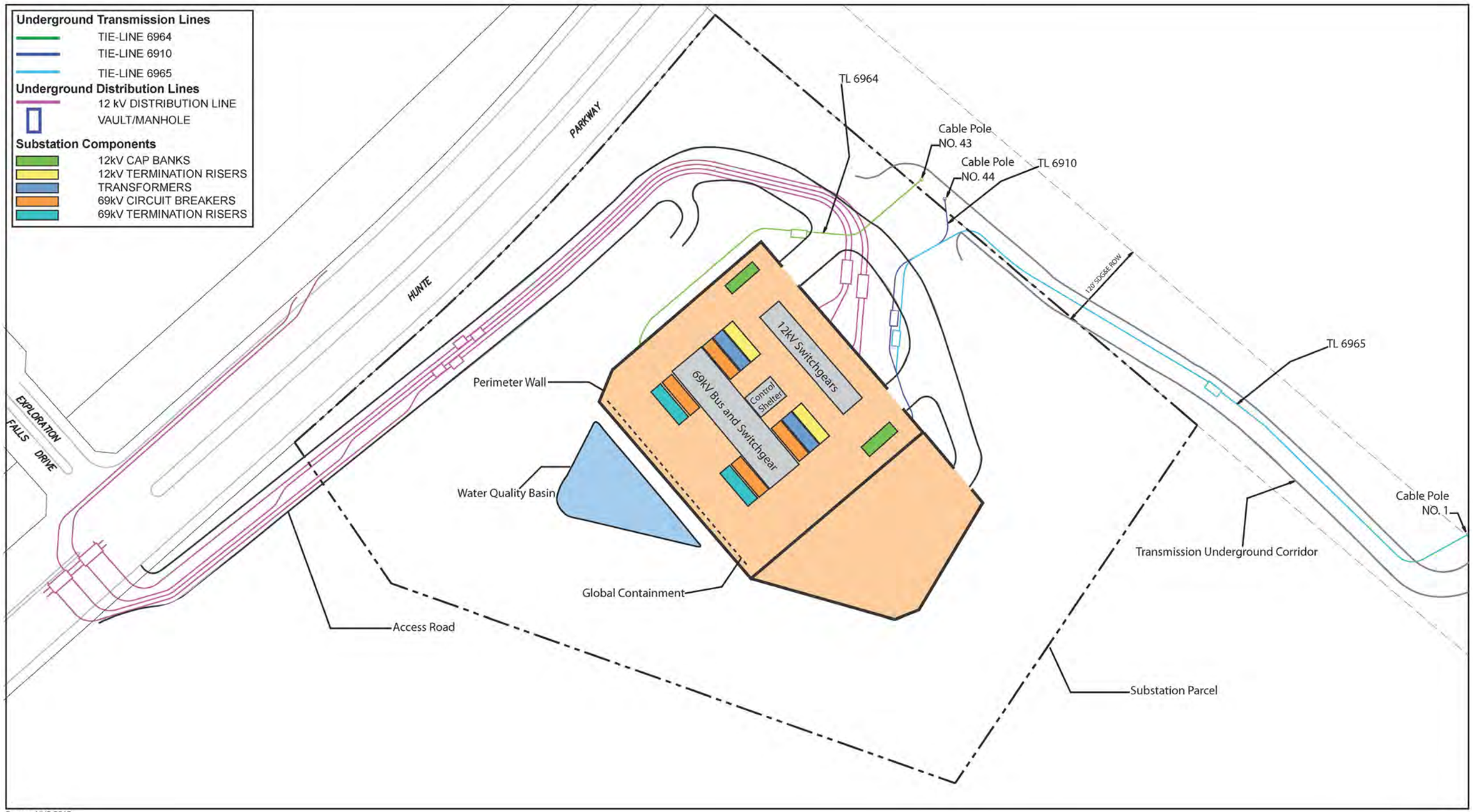
Figure 3-5: Salt Creek Substation Layout



Source: NV5 2012

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3.0.3 TL 6910 Loop-In

TL 6910 is an existing 69-kV circuit with terminal points at SDG&E's Existing Substation and Border Substation. Border Substation is located on Otay Mesa in the City of San Diego. As part of the Proposed Project, SDG&E would open TL 6910 by installing two new steel cable poles, and intercepting and looping the power line underground via two new 69-kV duct packages. The new 69-kV duct packages would be installed in two separate 300-foot-long trench alignments, originating at the existing Transmission Corridor and extending into the proposed Salt Creek Substation. The existing TL 6910 would then be re-configured as TL 6910 (Border - Salt Creek) and TL 6964 (Existing Substation – Salt Creek). Refer to Appendix 3-A for a figure showing the schematic power line configuration. The fiber-optic line on TL 6910 would also be looped into the proposed Salt Creek Substation via the same cable poles and duct packages. The fiber-optic line would be available when the Proposed Project goes into construction.

3.0.4 Existing Substation Modifications

The Existing Substation is located east of SR-125 in an unincorporated portion of San Diego County, bounded by San Miguel Road on the north and the City of Chula Vista on the south. The Existing Substation is located on an approximately 200-acre parcel owned by SDG&E. The proposed modification would consist of extending the 69-kV rack to accommodate space for TL 6965. An existing power line (TL 643) would be relocated to the new rack position, and the vacant position left by TL 643 would accommodate the new TL 6965 line. Due to the location of the overhead poles allowing both lines to exit the substation, shifting the transmission positions is necessary. This modification would be located in the Existing Substation.

3.1 Existing Transmission System

Currently, three overhead transmission circuits are located in the Transmission Corridor between the Existing Substation and the proposed Salt Creek Substation, as provided in Appendix 3-A, Existing Transmission System. Existing TL 6910 is located on a combination of wood and steel poles along the west side of the 120-foot-wide Transmission Corridor connecting the Existing Substation to the Border Substation in Otay Mesa. TL 23041 and TL 23042 are located on double-circuit steel lattice towers along the centerline of the Transmission Corridor, connecting the Existing Substation to SDG&E's Otay Mesa Substation. Seven structures along a portion of TL 643 and one structure on TL 6910, which are located on SDG&E's Existing Substation property, would be used to complete the TL 6965 connection to the 69-kV bay position at the Existing Substation.

3.2 Project Objectives

The main purpose of the Proposed Project is to build a new distribution 69/12-kV substation to serve existing and planned residential and commercial development in the southeastern portion of the City of Chula Vista, and to provide the required power network to serve this region. Specifically, the Proposed Project has the following fundamental objectives:

8. Meet the area's projected long-term electric distribution capacity needs by constructing the proposed Salt Creek Substation near planned load growth to maximize system efficiency.

9. Provide three 69-kV circuits into the Salt Creek Substation to serve load growth in the region and meet the regulatory requirements of the North American Electric Reliability Corporation (NERC), Western Electric Co-ordinating Council (WECC), and the California Independent System Operator (CAISO).

10. Provide substation and circuit tie capacity that would provide additional reliability for existing and future system needs.

11. Reduce loading on area substations to optimum operating conditions, providing greater operational flexibility to transfer load between substations within the proposed Salt Creek Substation service territory.

12. Comply with and respect the outcome of the extensive community-based public process to select a site for a new substation in the Otay Ranch area, as evidenced by City of Chula Vista City Council Resolution 2011-073.

13. Meet Proposed Project needs while minimizing environmental impacts by siting the substation on property designated for future development that is located outside of the City of Chula Vista's MSCP Preserve.

14. Locate proposed new power facilities, as appropriate and as needed, within existing utility rights-of-ways (ROWs), access roads, and utility-owned property.

Refer also to Chapter 2.0, Project Purpose and Need, for additional discussion of the Proposed Project's various components and objectives.

3.3 Proposed Project Components

3.3.1 Salt Creek Substation

3.3.1.1 Electrical Facilities

The Proposed Project includes construction and operation of the proposed 120-MVA 69/12-kV Salt Creek Substation. The proposed Salt Creek Substation would be unattended and automated. The preliminary substation layout is provided in Figure 3-5, Salt Creek Substation Layout. In addition, a profile view of the Salt Creek Substation is provided in Figure 4.1-15, Landscape Concept Plan Cross-Section. Substation electrical facilities are as follows:

- Two 69/12-kV low-profile 30-MVA transformer banks
- Steel 69-kV bus and associated disconnects
- Six 69-kV gas circuit breakers
- 12-kV switchgear with four 12-kV circuit positions each
- Two 12-kV metal-enclosed capacitor banks

- 69-kV and 12-kV associated relays, controls, and station batteries inside a 40-foot-long by 20-foot-wide enclosed, all-weather structure
- Three 69-kV power lines
- Three distribution circuits

Additional facilities located inside the enclosed, all-weather structure would include metering, Supervisory Control and Data Acquisition (SCADA), security, and communications equipment. A 10-foot-high masonry wall would enclose the entire substation area. The layout of the proposed Salt Creek Substation is shown in Figure 3-5, Salt Creek Substation Layout.

3.3.1.2 Additional Infrastructure and Improvements

Salt Creek Substation oil containment would be provided globally by a concrete containment basin along the southwesterly substation masonry wall. In addition, local containment would be provided around each transformer. The containment system would be designed to hold the total volume of oil from the transformers, the largest oil-containing substation equipment. The maximum amount of oil required for the transformers at the proposed Salt Creek Substation would be approximately 5,500 gallons per transformer.

A water-quality detention basin is proposed in the southwest corner of the substation pad, outside the substation wall. The water-quality basin would be designed to meet volume, area, depth, and detention time objectives of the Regional Water Quality Control Board (RWQCB) and City of Chula Vista. The preliminary substation layout features a 15,500-square-foot area for a 4-foot-deep basin. With 3:1 side slopes, this would provide a detention volume of approximately 49,700 cubic feet. This preliminary design is conservative, and further analysis should yield design criteria substantially less than indicated above. The basin would also serve to meet San Diego County hydro-modification requirements. Approximately 75,000 square feet of impervious area is proposed for substation improvements. The preliminary calculation of required hydro-modification area is approximately 10,000 square feet.

The landscaping and irrigation system would be installed in conjunction with the proposed Salt Creek Substation construction, after site development construction activities are complete. The Proposed Project would use reclaimed water for irrigation, upon availability.

3.3.1.3 Access Roads and Improvements

An existing sewer access road from Hunte Parkway to the proposed Salt Creek Substation site would be widened from approximately 12 feet to 30 feet to ensure adequate substation access and to accommodate the proposed 12-kV underground conduit packages in the access road without disturbing the existing sewer line. The total length of the improved road section would be approximately 850 feet.

Retaining walls would be required to widen the existing sewer access road. Concrete, masonry, or soil nail walls would be used on the uphill side of the access road. Concrete, masonry, or mechanically stabilized earth (MSE) walls would be installed on the downhill side of the road. The retaining walls would be constructed in accordance with the Proposed Project's

Geotechnical Report and Recommendations, in accordance with standard construction practices, and pursuant to structural requirements from the City of Chula Vista. A site plan depicting the substation layout and access roads is included as Figure 3-5, Salt Creek Substation Layout.

3.3.1.4 Substation Lighting and Security

Lighting at the proposed Salt Creek Substation would follow SDG&E lighting standards, which provide for enough light for a safe entry to and exit from the substation; allow for safe driving around buses/racks, corners, and roadways; and allow for a preliminary visual inspection of the substation. Lights are not for security and are not to be left on at night, with the exception of the gate entry light and lights required for nighttime work and/or an emergency.

A mixture of high-pressure sodium (typically used for gate entry lights) and metal halide lights may be used. One light would be installed at the main gate, one light would be installed on each side of the enclosed all-weather structure, and a minimum of two lights would be installed on each wall. If required, lights may also be installed on the end of the steel rack. All lights would be shielded and pointed down to minimize glare onto surrounding properties and natural habitats.

Two 8-foot-high chain-link gates would provide access to the substation from the existing sewer access road extending to the substation from Hunte Parkway. The gates would be locked and monitored remotely to restrict access. Warning signs would be posted in accordance with SDG&E guidelines. The perimeter wall and gates would be consistent with SDG&E's operational and safety guidelines.

3.3.1.5 Distribution

The ultimate conduit facility would be installed initially from the substation up to the Hunte Parkway electrical vaults, known by SDG&E Distribution as manholes. Initially, three new distribution circuits would be extended underground from the proposed Salt Creek Substation to intercept existing circuits in Hunte Parkway and adjacent streets. The underground circuits would be routed along and within the substation driveway to Hunte Parkway. Load would be transferred from existing circuits to new Salt Creek Substation circuits. Ultimately, 13 additional circuits could be installed underground as the residential and commercial area load develops. Distribution engineering design would be completed closer to the time of construction based on load demands.

The 12-kV duct package carrying the distribution circuits from the substation to Hunte Parkway would have a standard depth of approximately 5 feet to the bottom of the package (see Appendix 3-A). The distribution configuration includes four duct packages. Each duct package consists of six 5-inch-diameter conduits arranged in two columns, spaced vertically and horizontally from the conduit centerline by 7.5 inches. The horizontal separation between the two adjacent duct packages would be 5 feet, from centerline to centerline. A concrete slurry mix would be installed to protect each duct package.

Two 12-kV distribution manholes would be installed in the improved substation access road, two distribution manholes would be installed in Hunte Parkway, and additional manholes would be installed as required along the access road. Distribution manholes measure approximately 9 feet wide, 21 feet long, and 13 feet deep. In addition, installation of associated manhole racking, terminations, and approximately 1,400 feet of a 1,000-circular-mils (kcmil) copper underground cable would be required for each of the three initial distribution circuits from the substation to Hunte Parkway.

3.3.2 TL 6965

SDG&E is proposing to construct a new, approximately 5-mile-long, single-circuit 69-kV power line along the easterly edge of SDG&E's existing Transmission Corridor from the Existing Substation to the proposed Salt Creek Substation. Figures 3-4, Transmission Corridor Key Map, and Figures 3-4A through 3-4D, Transmission Corridor Route Maps, show the location of the proposed 69-kV power line based on the preliminary design. The existing Transmission Corridor is 120 feet wide and includes an existing 69-kV power line (TL 6910) and two 230-kV power lines (TL 23041/42) mutually located on double-circuit steel lattice towers. The new 69-kV line would be built within the existing ROW, approximately 15 feet in from the eastern edge of the 120-foot-wide easement.

Power Poles

TL 6965 would use approximately 49 poles (48 pole structures), including eight existing poles (seven associated with TL 643[2] and one associated with TL 6910). Approximately 41 new dulled, galvanized steel power poles would be erected on the new 69-kV power line. Table 3-1 provides a summary of the power poles. Directly embedded, galvanized steel poles would be used for tangent structures where the power line is generally straight, and engineered poles would be used for heavy angles and freeway crossings. An engineered cable pole is required where the power line transitions from overhead to underground. TL 6965 would include approximately 41 new poles, consisting of the following:

- 30 directly embedded galvanized steel poles (29 pole structures, including one two-pole H-frame structure)
- 10 galvanized engineered foundation poles
- One engineered foundation cable pole

[2] At this time, several poles along TL 643 are currently in the process of being replaced as part of a separate project that should be completed by the end of 2013. This PEA analysis is based on the poles that will be in place at the time the Proposed Project is constructed. Seven existing poles are part of TL 643. Refer to Section 3.0.2, TL 6965.

Table 3-1: Power Pole Summary*

Pole Structure #	Tie Line No.	Pole Type	Approximate Height of Structure Above Ground Level (AGL)	Proposed Action	Notes and Additional Work Areas
1	6965	Cable Pole	103	Install New Pole	Stringing Site #14 (4,500 square feet [SF])
2	6965	Foundation Pole	108	Install New Pole	Guard Structure #32 and #33, Hunte Parkway, pole brushing (314 SF)
3	6965	Directly Embedded	48	Install New Pole	Permanent work pad and access road
4	6965	Directly Embedded	61	Install New Pole	Permanent work pad and access road; Guard Structure #30 and #31, Crossroads Street
5	6965	Directly Embedded	70	Install New Pole	Overland travel required; Guard Structure #28 and #29, Windingwalk Street
6	6965	Directly Embedded	52	Install New Pole	Permanent work pad and access road
7	6965	Directly Embedded	61	Install New Pole	Permanent work pad and access road
8	6965	Directly Embedded	48	Install New Pole	Permanent work pad and access road
9	6965	Directly Embedded	61	Install New Pole	Permanent work pad and access road
10	6965	Directly Embedded	66	Install New Pole	Permanent work pad and access road; Guard Structure #27, Olympic Parkway
11	6965	Directly Embedded	57	Install New Pole	Permanent work pad and access road; Stringing Site #13 (3,000 SF); Guard Structure #26, Olympic Parkway

Pole Structure #	Tie Line No.	Pole Type	Approximate Height of Structure Above Ground Level (AGL)	Proposed Action	Notes and Additional Work Areas
12	6965	Directly Embedded	48	Install New Pole	Permanent work pad and access road
13	6965	Directly Embedded	52	Install New Pole	Permanent work pad and access road; Stringing Site #12 (4,500 SF)
14	6965	Directly Embedded	57	Install New Pole	Permanent work pad and access road
15	6965	Directly Embedded	61	Install New Pole	Permanent work pad and access road
16	6965	Directly Embedded	52	Install New Pole	Permanent work pad and access road
17	6965	Directly Embedded	57	Install New Pole	Permanent work pad and access road
18	6965	Directly Embedded	57	Install New Pole	Permanent work pad and access road
19	6965	Directly Embedded	52	Install New Pole	Guard Structure #25, Eastlake Parkway, pole brushing (314 SF)
20	6965	Directly Embedded	66	Install New Pole	Permanent work pad and access road; Guard Structure #24, Eastlake Parkway
21	6965	Directly Embedded	70	Install New Pole	Stringing Site #11 (4,500 SF), pole brushing (314 SF)
22	6965	Foundation Pole	58	Install New Pole	Guard Structure #23, SR-125, pole brushing (314 SF)
23	6965	Foundation Pole	113	Install New Pole	Stringing Site #10 (3,000 SF); Guard Structure #22, SR-125, pole brushing (314 SF)

Pole Structure #	Tie Line No.	Pole Type	Approximate Height of Structure Above Ground Level (AGL)	Proposed Action	Notes and Additional Work Areas
24	6965	Foundation Pole	108	Install New Pole	Stringing Site #9 (4,500 SF); Guard Structure #21, Otay Lakes Road
25	6965	Foundation Pole	123	Install New Pole	Guard Structures #18 and #19, SR-125 ramps; Guard Structure #20, Otay Lakes Road
26	6965	Foundation Pole	118	Install New Pole	Permanent work pad
27	6965	Foundation Pole	93	Install New Pole	Permanent work pad; Stringing Sites #7 (4,500 SF) and #8 (4,500 SF); Guard Structure #15, SR-125; Guard Structures #16 and #17, Eastlake Drive
28	6965	Foundation Pole	93	Install New Pole	Permanent work pad; Stringing Site #6 (9,000 SF); Guard Structures #13 and #14, SR-125
29	6965	Foundation Pole	88	Install New Pole	Guard Structure #9 and #10, Rolling Ridge Road and Guard Structures #11 and #12, Proctor Valley Road, pole brushing (314 SF)
30	6965	Directly Embedded	70	Install New Pole	Permanent work pad; Guard Structures #5 and #6, Proctor Valley Road; Guard Structures #7 and #8, Mountain Ridge Road
31	6965	Directly Embedded	70	Install New Pole	Permanent work pad; Guard Structures #3 and #4, Calle La Marina

Pole Structure #	Tie Line No.	Pole Type	Approximate Height of Structure Above Ground Level (AGL)	Proposed Action	Notes and Additional Work Areas
32	6965	Directly Embedded	52	Install New Pole	Permanent work pad
33	6965	Directly Embedded	52	Install New Pole	Overland travel required, pole brushing (314 SF)
34	6965	Directly Embedded	57	Install New Pole	Permanent work pad; Guard Structures #1 and #2, Mount Miguel Road
35	6965	Directly Embedded	61	Install New Pole	Permanent work pad
36	6965	Directly Embedded	52	Install New Pole	Footpath required
37	6965	Directly Embedded	66	Install New Pole	Pole brushing (314 SF)
38	6965	Existing TL 6910	87	Pole Top Work Only	Stringing Site #5 (1,920 SF), pole brushing (314 SF)
39.P1	6965	Directly Embedded H-Frame (South Pole)	34	Install New Pole	Pole brushing (314 SF)
39.P2	6965	Directly Embedded H-Frame (North Pole)	34	Install New Pole	Stringing Sites #3 (5,700 SF) and #4 (1,920 SF), pole brushing (314 SF).
40	6965	Directly Embedded	61	Install New Pole	New access road required (4,064 SF), pole brushing (157 SF)
41	6965	Existing TL 643	61**	Pole Top Work Only	Only requires access for pole-top work; footpath required

Pole Structure #	Tie Line No.	Pole Type	Approximate Height of Structure Above Ground Level (AGL)	Proposed Action	Notes and Additional Work Areas
42	6965	Existing TL 643	63**	Pole Top Work Only	Only requires access for pole-top work; footpath required
43	6965	Existing TL 643	74**	Pole Top Work Only	Only requires access for pole-top work
44	6965	Existing TL 643	61**	Pole Top Work Only	Only requires access for pole-top work
45	6965	Existing TL 643	70**	Pole Top Work Only	Only requires access for pole-top work
46	6965	Existing TL 643	75**	Pole Top Work Only	Only requires access for pole-top work
47	6965	Existing TL 643	61**	Pole Top Work Only	Only requires access for pole-top work; Stringing Site #2 (2,000 SF)
48	6965	Foundation Pole	61	Install New Pole	Overland travel required; String Site #1 (3,750 SF), pole brushing (314 SF)
49	6910	TL 6910 North Cable Pole	86	Install New Pole	TL 6910 Loop-In (north)
50	6910	TL 6910 South Cable Pole	86	Install New Pole	TL 6910 Loop-In (south)

Source: SDG&E

* Based on preliminary design

** Height is based on new TL 643 replacement poles to be installed by the end of 2013

These structures would have an average height above ground of approximately 68 feet, and would range in height from approximately 34 feet to 123 feet. At the proposed Salt Creek Substation, one approximately 103-foot-high cable pole would be erected to transition the line from overhead to underground. Proposed pole locations are shown in Figures 3-4A through 3-4D, Transmission Corridor Route Maps. Drawings of a typical directly embedded steel pole, a typical engineered foundation pole, and a typical cable pole structure are provided in Appendix 3-A. All transmission poles meet raptor safety requirements, because of phase spacing.

Directly Embedded Steel Poles

Light-duty, directly embedded steel poles are secured using a concrete backfill. These dulled galvanized poles would have above-grade heights of approximately 34 to 70 feet. The pole diameter at ground level would be approximately 16 to 28 inches, requiring a 40- to 52-inch-diameter hole approximately 6 to 17 feet deep. This type of pole would be used at 30 structure locations (including one H-frame structure that would have two poles).

Engineered Foundation Steel Poles

Heavy-duty engineered steel poles would be directly bolted to a reinforced concrete pier foundation. An exposed concrete foundation would extend approximately 2 feet above grade. These dulled galvanized poles would have heights above grade of approximately 58 to 123 feet. The diameter of the pole foundation at ground level would be approximately 6 to 7 feet. This type of pole would be used at approximately 10 locations.

Engineered Foundation Cable Poles

Cable poles are heavy-duty, engineered steel poles that would be bolted to a reinforced concrete pier foundation and include underground connections. An exposed concrete foundation would extend approximately 2 feet above grade. The one dulled galvanized cable pole for TL 6965 would have a height above grade of approximately 103 feet. The diameter of the pole foundation at ground level would be approximately 6 to 8 feet. This pole type would also require a trench from the base to the associated underground package.

Access Roads and Improvements

Permanent work pad areas would be required at approximately 24 pole locations to provide a safe work area and to provide access during construction and for post-construction operations and maintenance work. At approximately 16 of these locations, the proposed pole structure would be located in the existing access road to meet engineering design requirements; therefore, the existing access road would be adjusted at these locations to allow for access around the pole and to allow for a safe work area. Approximately 1.2 acres of total land would be required for these new permanent work pads, including access road adjustments. For work pads requiring manufactured slopes to create the work pad, the manufactured slopes would be revegetated with a native seed mix. In addition, construction of the proposed TL 6965 would require a new access road to one pole, the temporary use of overland travel for access to three poles, stringing sites, guard structures at road crossings, and staging yards for construction materials and vehicles, as discussed in more detail in Section 3.5, Construction.

A more detailed route map showing the preliminary design of the proposed TL 6965, as well as the work pads, access roads, stringing sites, guard structures, and staging yards, is provided in Appendix 3-B, Detailed Route Maps.

Underground Duct Bank

The final approximately 1,000-foot-long segment of this 69-kV power line would be installed underground in a concrete-encased duct bank from the cable pole to the substation rack. The

duct bank would measure approximately 30 inches wide by 33 inches high for a vertical configuration, or 72 inches wide by 15 inches high for a horizontal configuration. Either configuration would contain six 6-inch-diameter conduits for a transmission cable and one 4-inch-diameter conduit for telecommunication. One steel engineered cable pole, approximately 103 feet high, would be installed at the end of the overhead segment to connect overhead conductors to the underground substation getaways. Drawings of typical underground concrete duct banks are provided in Appendix 3-A. Approximately six vaults would be installed to connect and join the underground cables. Underground vaults would be approximately 9.5 feet wide, 17.5 feet long, and 11 feet deep. Drawings of a typical vault are provided in Appendix 3-A.

Conductor

The majority of the poles would be tangent structures. The typical pole top arrangement is provided in Appendix 3-A. The distance from the ground to the lowest conductor and the distance between the conductors would meet General Order (GO) 95 requirements. The span lengths between poles would vary with terrain, but would generally range between 250 and 2,000 feet.

Typical tangent 69-kV steel poles would have three post insulators to carry conductors. Typical structures at heavy angles would have three post insulators and six suspension insulators. Conductors would be supported by each insulator. Circuits typically consist of three phases, with one conductor per phase, and a total of three conductors supported by the typical transmission poles.

Insulators would be constructed of a gray polymer and overhead conductors would be made from dulled aluminum.

Within the underground concrete duct bank between the cable riser pole and proposed Salt Creek Substation, SDG&E would install a cross-linked polyethylene cable. The underground concrete duct bank would also accommodate the fiber-optic line.

3.3.3 TL 6910 Loop-In

TL 6910 is an existing overhead 69-kV circuit traversing approximately 10 miles, with terminal points at the Existing Substation and Border Substation. The Proposed Project would “open” TL 6910, allowing SDG&E to loop the line into the proposed Salt Creek Substation, as shown in Figure 3-5, Salt Creek Substation Layout. The portion of existing TL 6910 between the Border Substation and the proposed Salt Creek Substation would retain the TL 6910 designation. The portion of existing TL 6910 between the proposed Salt Creek Substation and the Existing Substation would carry the new designation TL 6964.

Two cable poles (approximately 86 feet in height) would be erected east of the proposed Salt Creek Substation to loop-in existing TL 6910 to the proposed Salt Creek Substation. TL 6910 and TL 6964 would proceed approximately 300 feet underground from the cable poles via a conduit package to the proposed Salt Creek Substation. Each 69-kV duct package would have a standard depth of approximately 6 to 9 feet below grade to the bottom of the package. See a typical drawing of an underground duct bank in Appendix 3-A.

Installation of approximately two 69-kV vaults would be required along this trench alignment, as well as associated vault racking, underground cable, cable joints, and terminations.

Telecommunications would enter into the proposed Salt Creek Substation via the 69-kV underground duct package. The fiber-optic cable would be installed in the new transmission conduit from the proposed Salt Creek Substation to the proposed cable pole.

All work for the TL 6910 loop-in would occur within areas disturbed as part of the proposed TL 6965 undergrounding and the proposed Salt Creek Substation improvements.

3.3.4 Existing Substation Modification

At the Existing Substation, a new 69-kV circuit position would be installed for the new TL 6965 going to the proposed Salt Creek Substation. The circuit breaker for TL 6910 would be re-tagged with its new designated circuit name (TL 6964), and TL 643 would be relocated to provide a circuit position for TL 6965. The following modifications would be installed at the Existing Substation:

- Steel supports and associated bus work to extend the 69-kV rack
- Four 69-kV disconnect switches
- Two 69-kV gas circuit breakers
- Associated relays and controls

3.4 Permanent Land/Right-of-Way Requirements

The Proposed Project would be developed on land that is either already owned by SDG&E or within existing SDG&E easements. No additional land purchase or easements are required at this time to implement the Proposed Project.

3.4.1 Substations

SDG&E purchased, in fee, an 11.64-acre site in June 2011 for construction of the proposed Salt Creek Substation. All improvements for the proposed Salt Creek Substation would occur on SDG&E's fee-owned property or within easements acquired in conjunction with acquiring the substation property. All proposed modifications at the Existing Substation would also occur on SDG&E's existing fee-owned property.

Distribution facilities associated with the proposed Salt Creek Substation would be located within existing SDG&E easements, fee-owned property, or the existing Hunte Parkway public ROW, consistent with SDG&E's franchise agreement with the City of Chula Vista. From Hunte Parkway, the distribution circuit would connect to facilities along adjacent streets.

3.4.2 TL 6965 and TL 6910 Loop-In

No property acquisition would be required for work related to the power lines. All facilities related to the proposed TL 6965 would be located within the existing 120-foot-wide Transmission Corridor easement extending between the Existing Substation and the proposed Salt Creek Substation, or on SDG&E's fee-owned property surrounding the Existing Substation and the proposed Salt Creek Substation.

Looping-in of TL 6910 would also occur entirely within the Salt Creek Substation parcel owned by SDG&E and/or within the existing 120-foot-wide Transmission Corridor adjacent to the Salt Creek Substation property.

3.5 Construction

This section describes the construction methods, required access, work areas and requirements, and vegetation clearing for the Proposed Project components. Table 3-2, Land Disturbance, provides a summary of permanent and temporary impacts to land, and Table 3-3, Estimated Grading Quantities, provides a summary of the estimated grading quantities for each of the Proposed Project's components based on preliminary engineering. SDG&E's construction methods are subject to implementation of SDG&E's standard environmental procedures and protocols, including SDG&E's Subregional Natural Community Conservation Plan (NCCP), which is described in greater detail in Section 4.4, Biological Resources, and below (see Sections 3.7 and 3.8). For nearly two decades, SDG&E has successfully implemented the NCCP for projects such as the Proposed Project.

Table 3-2: Land Disturbance*

Proposed Project Component	Permanently Disturbed Area	Additional Temporarily Disturbed Area	Total Disturbance Area
Salt Creek Substation			
• Substation and access road (includes 12-kV distribution and 69-kV underground duct packages for TL 6965 and TL 6910 within the substation property)	362,725 square feet (SF) (8.33 acres)	73,125 SF (1.68 acres)	435,850 (10 acres)
• Driveway and access road to Hunte Parkway (includes 12-kV distribution duct packages up to Hunte Parkway outside of the substation property)	18,650 SF (0.43 acre)	6,950 SF (0.16 acre)	25,600 SF (0.59 acre)
• Drainage to discharge at existing dissipator (outside of the substation property)	500 SF (0.01 acre)	2,200 SF (0.05 acre)	2,700 SF (0.06 acre)
69k-V TL 6965 & TL 6910 Loop-In			
• TL 6965 overhead work pad/modified access/pole work areas	52,390 SF (1.2 acres)	75,508 SF (1.73 acres)	(127,898 SF) (2.94 acres)

Proposed Project Component	Permanently Disturbed Area	Additional Temporarily Disturbed Area	Total Disturbance Area
• TL 6965 underground grading and access (off-site in Transmission Corridor; includes cable poles 1, 43, and 44, and a portion of TL 6910 loop-in)	50,714 SF (1.16 acres)	32,528 SF (0.75 acre)	83,242 SF (1.91 acres)
• Stringing sites	0	57,290 SF (1.32 acres)	57,290 SF (1.32 acres)
• Guard structures	0	2,376 SF (0.55 acre)	2,376 SF (0.55 acre)
Existing Substation Modifications			
• 69-kV rack extension and 69-kV breaker foundations	203 SF (0.004 acre)	0	203 SF (0.004 acre)
Staging Yards			
• Hunte Parkway	0	348,480 SF (8.00 acres)	348,480 SF (8.00 acres)
• Existing Substation	0	87,120 SF (2.00 acres)	87,120 SF (2.00 acres)
• Eastlake Parkway	0	74,052 SF (1.70 acres)	74,052 SF (1.70 acres)
• Olympic Training Center	**	**	**
TOTAL	485,182 SF (11.14 acres)	759,629 SF (17.44 acres)	1,244,811 SF (28.58 acres)

Source: SDG&E

* Based on preliminary engineering. Estimates may change based on final design and construction.

** Alternate staging yard sites are not proposed for use at this time and would involve a commensurate reduction in square footage at the three proposed staging yards, depending on circumstances at the time of construction.

Table 3-3: Estimated Grading Quantities*

Proposed Project Component	Earthwork Quantity (cubic yards)	
	Cut	**Fill**
Salt Creek Substation		
• Substation and access road (on-site)**	89,800	137,100
• Driveway and access road to Hunte Parkway (off-site)**	100	800
• Drainage to discharge at existing dissipator (off-site)**	100	100
TL 6965 and TL 6910 Loop-In		
• 69-kV TL 6965 overhead	2,500	1,400
• TL 6965 underground grading and access (off-site in Transmission Corridor, includes cable poles 1, 43, and 44 and a portion of TL 6910 loop-in) **	4,000	0
Existing Substation Modification		
• 69-kV rack extension and 69-kV breaker foundations	127	230
Staging Yards		
• Hunte Parkway	30	30
• Existing Substation	N/A	N/A
• Eastlake Parkway	1,300	600
• Olympic Training Center	N/A	N/A
TOTAL	97,957	140,260

Source: SDG&E

* Based on preliminary engineering.

** These quantities, totaling 94,000 cubic yards of cut and 138,000 cubic yards of fill, are associated with substation site development, described in Section 3.5.1.1.

N/A = not applicable; no grading anticipated

3.5.1 Salt Creek Substation

3.5.1.1 Construction Methods

Construction activities would be completed in two stages. Stage 1 would consist of site grading and below-grade construction, as shown in Figure 3-6, Preliminary Grading and Drainage Plan. Site grading would include construction of all access roads and retaining walls concurrently, grading associated with underground duct packages, and clearing and grading of the substation pad. Below-grade construction would include installation of all substation foundations and construction of the perimeter site wall. Stage 2 would include erection of Salt Creek Substation structures. Figure 3-7, Land Disturbance, depicts land disturbance in the Salt Creek Substation site.

Stage 1 – Site Preparation

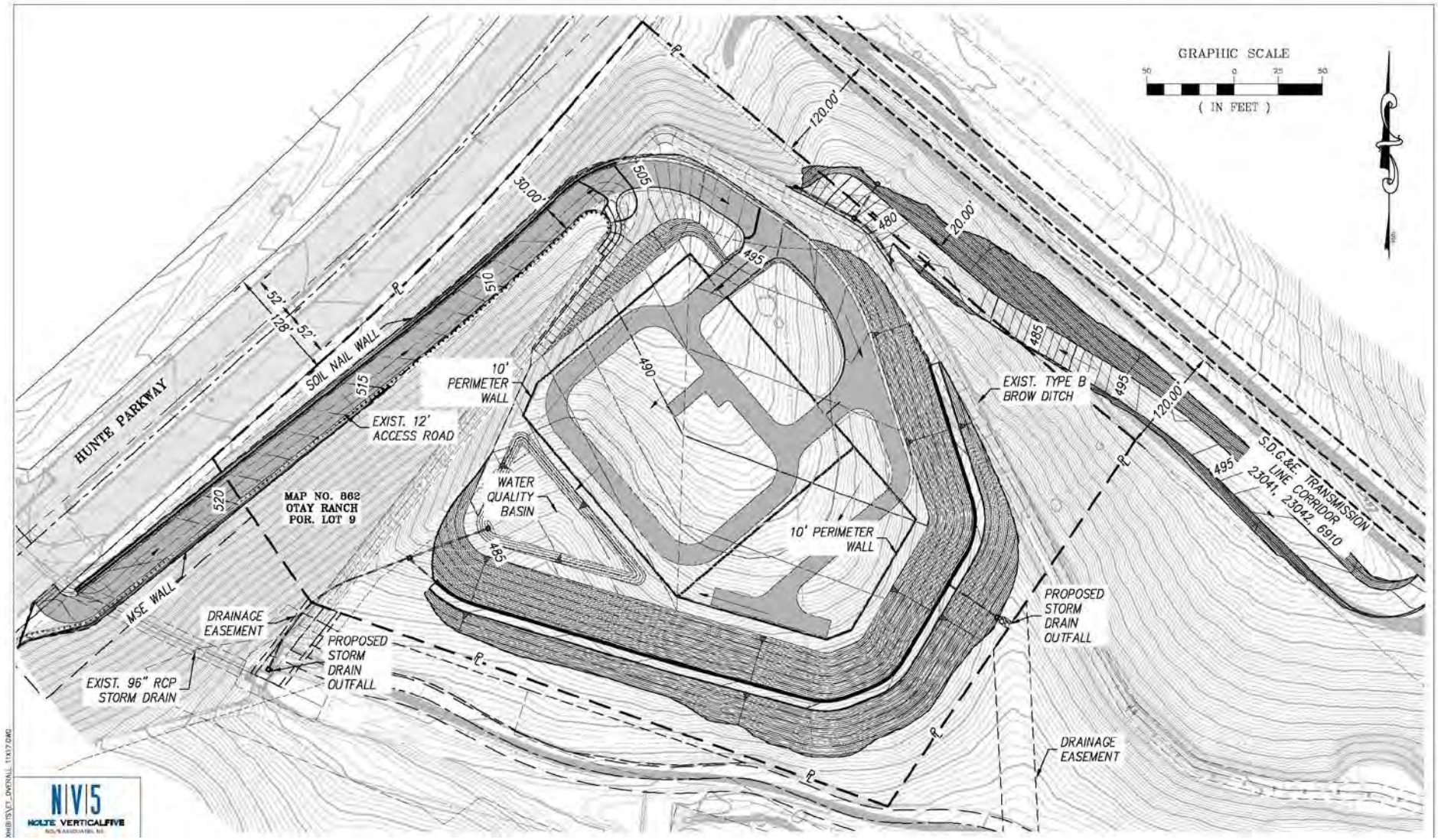
Prior to construction, site preparation activities would include clearing and vegetation removal. Clearing activities would use mowers, excavators, front-end loaders, and/or bulldozers.

Earthmoving activities associated with the proposed Salt Creek Substation would require limited remedial grading (removal of colluvium and alluvium) and mass grading to create the substation pad and improve the existing access road. Construction activities would include installing the retaining walls, storm water conveyances, a containment basin, a water quality detention basin, electrical underground conduits, a perimeter screen wall, and entry gates, and paving internal and external operational and maintenance access roads.

Earthwork associated with the proposed Salt Creek Substation site and access road improvements would require both cut and fill, estimated at approximately 94,000 cubic yards (CY) of cut and approximately 138,000 CY of fill. This includes remedial cut and fill of alluvium and colluvium, as outlined in the Proposed Project's Geotechnical Report and Recommendations, and cut associated with the 69-kV TL 6965 underground grading alignment. In total, it is estimated that up to 44,000 CY of structural fill and class 2 aggregate would be imported for construction. A summary of the anticipated grading quantities for the proposed Salt Creek Substation is provided in Table 3-3, Estimated Grading Quantities. Haul trucks, with an approximate 13-CY capacity, would be required to transport fill material to the site, resulting in approximately 3,400 haul truckloads. Borrow sites will be identified based on availability and in accordance with SDG&E procedures. Estimated total and daily truck trips are presented in Section 4.3, Air Quality.

SDG&E would design drainage elements to minimize surface runoff and erosion. In general, the Salt Creek Substation pad drainage would be directed to a water quality detention basin in the southwest corner. A storm drain from the water quality basin would convey runoff discharge to the existing 96-inch-diameter storm drain dissipater southwest of the site.

Figure 3-6: Preliminary Grading and Drainage Plan



Note: SDG&E is providing this map with the understanding that the map is not survey grade.

Figure 3-7: Land Disturbance

Note: SDG&E is providing this map with the understanding that the map is not survey grade.

Permanent cut-and-fill slopes for the proposed Salt Creek Substation and access road would be stabilized during construction with best management practices (BMPs) that are outlined in the Proposed Project's Storm Water Pollution Prevention Plan (SWPPP), as discussed in more detail in Section 3.5.6. Landscaping would also be installed as outlined in the Proposed Project's Conceptual Landscape Plan (see Section 4.1, Aesthetics). The SWPPP BMPs would remain in place and would be maintained until new vegetation is established.

Following site development, below-grade work would begin. Below-grade work would include structure and equipment foundations, underground ducts, ground grid, and construction of the all-weather structure (control shelter). Construction of the distribution circuits and tie lines surrounding the Proposed Project would begin while the proposed Salt Creek Substation is under construction. Concrete trucks, backhoes, and loaders would be used for foundation and below-grade work.

Stage 2 – Above-Grade Construction

Once grading activities and below-grade foundation construction are complete, major equipment and structures would be installed and anchored on their respective foundations. The following steps would be associated with installing above-grade equipment:

- 69-kV rack erected
- 69-kV circuit breakers installed on their foundations
- Relay panels, controls, and batteries installed within the control shelter
- Ground grid, control, communication, and power ducts installed, with wiring of the equipment controls and protection devices to follow
- Two 69/12-kV transformers installed on their foundations, assembled, and filled with oil
- 12-kV switchgear and capacitors installed on their foundations

Power lines and distribution circuits would be connected inside the substation after substation structures and equipment are completed. Control and protection wiring would be completed in parallel with these construction activities. Testing would be performed on all equipment after the equipment is installed and wired, and before placing it in service. Equipment would be placed in service once individual power lines and 12-kV circuits are ready to be energized and are tested outside the substation.

An AT&T telephone line would be brought inside the enclosed, all-weather structure via one underground 4-inch-diameter duct coming from AT&T's existing facilities on Hunte Parkway. The 4-inch-diameter duct would intercept AT&T's existing underground facilities and continue in an underground trench into the substation.

Fiber-optic lines would be pulled along TL 6910 as a separate project that would be completed before construction of the proposed Salt Creek Substation. The fiber-optic component of the Proposed Project would be limited to the loop-in to the proposed Salt Creek Substation as part of the TL 6910 loop-in component.

Portable cranes and heavy hauling trucks would be employed to transport and unload the 69/12-kV transformers. Substation crews, assist vehicles, forklifts, man lifts, and boom trucks would be used to construct the proposed Salt Creek Substation. Oil processing equipment and vacuum pumps would be used to fill transformers with oil. Pick-up trucks and vans would be used for wiring and control testing of the substation equipment. Line trucks, assist vehicles, and cable dolly trailers would be used for construction of the transmission and distribution circuits.

A temporary tap to an existing distribution line would be installed to provide electrical service to the proposed Salt Creek Substation site during construction. This temporary tap would be used to power construction trailers, lighting, or small hand-held machinery or tools until the substation is energized. The temporary tap would connect a distribution line from the existing distribution line to the proposed Salt Creek Substation site. For a description of underground distribution construction, see Section 3.6.2.1, below.

3.5.1.2 Dewatering

No dewatering is anticipated during construction of the proposed underground distribution utilities. However, in the event that groundwater is encountered, dewatering activities would be conducted in accordance with all existing regulations and requirements.

3.5.1.3 Access

The existing sewer access road from Hunte Parkway would provide primary access to the proposed Salt Creek Substation site during construction. During road improvements that include pavement widening, retaining wall construction, and construction of 12-kV distribution packages, temporary access to the substation site would be provided from the Transmission Corridor. Temporary access from the Transmission Corridor to the substation site would follow the 69-kV underground route from the substation to the Transmission Corridor. This temporary access would be provided by the existing driveway apron on Hunte Parkway within the Transmission Corridor, and would follow the existing unpaved access road southerly to a point near the proposed cable pole for TL 6965 underground.

Current graded width of the existing sewer access road from Hunte Parkway to the substation site is approximately 16 feet. The paved portion of the roadway averages approximately 12 feet wide. The remaining 4 feet is occupied by roadway shoulder and drainage elements. An existing 13-foot-wide driveway apron provides an entry to the sewer access road from Hunte Parkway. Proposed access road improvements include widening the total graded width to approximately 41 feet, installing new asphaltic concrete (AC) pavement to an approximate width of 30 feet, installing guardrails above the proposed downhill side retaining structure, widening the existing driveway apron to 30 feet, and removing and replacing approximately 120 feet of curb and gutter westerly from the driveway and along Hunte Parkway. Drainage conveyance associated with access road improvements would be installed and maintained in accordance with the requirements of the City of Chula Vista and RWQCB.

No changes are proposed to the existing street light and signal directly southwest of the existing driveway apron for the sewer access road. This street light/signal limits the access of large construction vehicles. From Hunte Parkway, large vehicles would drive over the curb and

gutter that is immediately westerly of the street light/signal. As mentioned above, approximately 120 feet of the existing unreinforced concrete curb and gutter would be removed and replaced with a reinforced concrete curb and gutter. Improvements to the existing driveway, curb, and gutter would require a public improvement permit and traffic control plans.

The access roads are shown in Figure 3-5, Salt Creek Substation Layout.

3.5.1.4 Work Areas

Figure 3-7, Land Disturbance, depicts the limits of temporary and permanent disturbance areas for Salt Creek Substation site development. Table 3-2 includes disturbance area calculations for the substation. Salt Creek Substation site development includes portions of the proposed underground 69-kV (TL 6965 and TL 6910 loop-in) and underground 12-kV distribution. Therefore, work areas associated with underground duct and vault construction are included within the work area for Salt Creek Substation site development.

3.5.1.5 Landscaping

The proposed landscape plan is provided in Figures 4.1-2A and 4.1-2B, in Section 4.1, Aesthetics. The proposed planting scheme would screen public views of the proposed Salt Creek Substation site and enhance the aesthetic quality of the site. The proposed landscape plan includes street trees, slope and perimeter trees, and shrubs. All trees would be planted at a distance equal to their maximum height or half of their width, whichever is greater, from the substation walls and overhead transmission lines. The proposed landscape plan would be compatible with the existing environment and would conform to the City of Chula Vista's landscape standards. Landscaped areas would be maintained by SDG&E. The landscape plan proposes an irrigation system for vegetation maintenance. The Proposed Project would use reclaimed water upon availability.

3.5.2 TL 6965 and TL 6910 Loop-In

3.5.2.1 Construction Method

Overhead Power Line Construction

Clearing and Grading

Mowers and bulldozers would be used to clear and/or grade the areas required for pole/structure installation and at work pads. Mowing and minimal grading would be used at stringing sites. Permanent work pads would be required at approximately 24 pole locations to provide a safe work area and access during construction, as well as for post-construction operations and maintenance work. At approximately 16 of these locations, the proposed pole structure would be located in the existing access road to meet engineering design requirements; therefore, the access road would be adjusted at these locations to route access around the pole. Approximately 3 acres of land would be required for permanent and temporary work areas, as indicated in Table 3-2. For work pads requiring manufactured slopes, the manufactured slopes would be revegetated with a native seed mix.

Soil may be imported, as necessary, to raise the elevation of work areas. Borrow sites would be identified based on availability and in accordance with SDG&E procedures. Material removed during the process or subsequent excavation would be spread over existing access roads and work pads as appropriate, or disposed of off-site in accordance with all applicable laws. Approximately 200 CY of soil would be exported for TL 6965 grading. If deemed suitable, this soil may be used for the proposed Salt Creek Substation; otherwise, this material would be disposed of at an SDG&E-approved disposal site (i.e., landfill).

Access to these work areas would be provided by the existing access roads or by overland travel within or adjacent to SDG&E's existing ROW.

Steel Pole Installation

Light-Duty Directly Embedded Steel Pole Installation

Installing directly embedded galvanized steel poles would begin with excavating 40- to 52-inch-diameter holes. Depending on pole type and height, excavated holes would be approximately 6 to 17 feet deep. Holes would be drilled using a truck-mounted auger or similar equipment, and would result in the excavation of 2 to 10 CY of soil. Plywood boards would be used to cover the excavated holes until pole installation activities begin. New poles would then be delivered to the site and placed with a small crane. The annular space between the poles and holes would then be backfilled with concrete. Any remaining excavated material would be placed around the holes, spread onto adjacent access roads and properly compacted, or disposed of off-site at an approved facility. The permanent footprint required to install each of these new steel poles would be approximately 5 square feet.

Foundations for Engineered and Cable Pole Installation

All of the engineered steel poles that would be installed as part of the Proposed Project would be placed on new concrete foundations, typically consisting of drilled concrete piers. Following the preparation of the pole work area, the foundation process would begin with excavating a hole using a truck-mounted excavator with various-diameter augers to match the diameter and depth requirements of the foundation.

Each foundation hole would range from approximately 6 to 8 feet in diameter and 20 to 30 feet in depth, resulting in the excavation of between approximately 21 and 56 CY of soil, depending on conditions and pole type (foundation pole or cable pole). Following excavation of the foundation hole, a reinforcing steel cage and anchor bolts would be installed. Following cage installation, a form would be built and concrete would be poured to a height of approximately 6 to 24 inches above grade. Each foundation would require between approximately 22 and 60 CY of concrete to be delivered to the foundation location. Concrete would be delivered directly to the pole's location in concrete trucks with a capacity of up to 10 CY. If access is limited, concrete may be pumped from several hundred feet away from the pole location. Table 3-4, 69-kV Steel Pole Summary, provides a summary of the pole dimensions, disturbance areas, and concrete requirements for the poles that would be installed as part of the Proposed Project. Steel plating would be placed over excavated areas, where appropriate, to maintain vehicular and pedestrian traffic.

Engineered Pole Installation

Steel poles would be delivered in two or more sections to the pole site via flatbed trucks. A large crane would be used to lift and set the poles into place on the anchor bolts imbedded into the concrete foundation. The nuts on the foundation would then be tightened and secured.

Grounding Rods

All steel poles, regardless of foundation type, would require installing two grounding rods and a copper ground wire connecting the steel pole and rods. Grounding rods would be approximately 8 feet in length and installed vertically approximately 6 feet apart with the top of the rod approximately 18 inches below grade. Copper ground wire would be installed in a trench from the pole to the rods. After installation, the trench would be backfilled to the original grade. Grounding rods and wire would be installed within the established temporary work areas described above. Permanent impacts associated with grounding rod installation would be negligible (e.g., less than 1 square foot per structure).

Overhead Conductor Installation

Conductor installation procedures would be similar for all overhead portions of the proposed power lines. Prior to stringing the new overhead line, temporary guard structures would be installed at crossings above roadways and freeways, and also at crossings of energized electric and communication facilities, preventing the conductors from sagging onto other lines during conductor installation. Typically, guard structures consist of vertical wood poles with cross arms. In some cases, bucket or boom trucks may also be used for guard structures.

Conductor stringing operations would be facilitated by installing sheaves or “rollers” on the structure prior to conductor installation, using aerial manlifts (bucket trucks). The sheaves would allow the conductor to be pulled past each structure prior to being pulled up to the final tension position. Following installation of the sheaves, a pull rope (a small cable used to pull the conductor) would be pulled onto the sheaves using a helicopter. Once the pull rope is in place, it would be attached to a steel cable and pulled back through the sheaves. The conductor would be attached to the cable and pulled back through the sheaves using conventional tractor-trailer pulling equipment located at the pull sites. This process would be repeated for each conductor and line segment (pull site to pull site).

Table 3-4: 69-kV Steel Pole Summary*

Foundation Type	Approximate Quantity	Approximate Individual Footprint Pole Holes (square feet)	Total Approximate Footprint Pole Holes (acres)	Approximate Pole Diameter	Approximate Pole/Foundation Depth (feet)	Approximate Excavation Volume (CY) (Per Pole)	Approximate Concrete Volume (CY) (Per Pole)
Directly Embedded	29	5	0.003	16 to 28 inches	6 to 17	2 to 10	2 to 7
Foundation Pole –Drilled Pier	11	39	0.01	6 to 7 feet	20 to 30	21 to 43	22 to 46
Cable Pole	3 (2 on TL 6910)	39	0.01	6 to 8 feet	20 to 30	21 to 56	22 to 60

Source: SDG&E

* Based on preliminary engineering

Approximately 14 designated stringing sites would be required to tension the conductor to a pre-calculated level. Each stringing site would range in size from approximately 2,000 to 9,000 square feet, with a total of approximately 58,000 square feet of temporary impacts from construction equipment and vehicles within the Proposed Project area. As described previously, depending on topography, some incidental grading may be required at pulling and tensioning sites to create level areas for equipment.

After the conductor is pulled into place, the sags between the structures would be adjusted to a pre-calculated level. The line would be installed with minimum ground clearances dictated by the surrounding land uses, typically 30 feet of vertical clearance above drivable surfaces and 25 feet above non-drivable surfaces. The conductor would then be clipped into the end of each insulator, the sheaves would be removed, and vibration dampers and other accessories would be installed. This process would be repeated for each conductor and line segment.

Underground Power Line Construction

SDG&E plans to install four 12-kV distribution duct banks within the Salt Creek Substation property, continuing out within the access road to Hunte Parkway. TL 6965, TL 6910, and TL 6964 would be placed underground from the cable pole to the substation rack for the new underground connections. Trenching would occur within the Salt CreekSubstation property and Transmission Corridor, and would cross the City of Chula Vista's sewer access road.

Typical trench dimensions for installing a transmission duct bank are approximately 6 to 8 feet deep and 3 to 7 feet wide. Typical trench dimensions for installing a distribution duct bank are 3 to 6 feet deep and 2 to 7 feet wide. Depth may vary depending on soil stability and the presence of existing substructures. The trench would be widened and shored where necessary to meet California Occupational Safety and Health Administration (OSHA) requirements. If trench water is encountered, trenches would be dewatered using a portable pump and disposed of in accordance with existing regulations and requirements.

Prior to trenching, SDG&E would notify other utility companies to locate and mark existing underground utilities along the proposed underground alignment. SDG&E would also conduct exploratory excavations (potholing) to verify the locations of existing facilities in the ROW. Four duct packages would cross the existing City of Chula Vista sewer in the existing access road. Sewer crossings would be designed and constructed in accordance with City of Chula Vista requirements. SDG&E would coordinate with the City of Chula Vista to secure encroachment permits for trenching in City of Chula Vista ROWs, as required. Although the Proposed Project would not result in any road closures, some roads may be limited to one-way traffic at times. In these cases, one-way-traffic controls would be implemented as required by the traffic control plan approved by the City of Chula Vista and/or the California Department of Transportation (Caltrans).

The majority of the duct bank would be installed using open-cut trenching techniques. Trench construction would be staged in intervals, consistent with any applicable permit requirements. This would generate approximately 200 to 300 CY per day of excavated material, which would be exported to an SDG&E-approved disposal site. At any one time, open trench lengths would

not exceed that required to facilitate the installation of the duct bank. Steel plating would be placed over the trenches for safety and to maintain vehicular access over the existing sewer access road.

Duct Bank Installation

As the trench for the underground duct banks is completed, SDG&E would install the cable conduits (separated by spacers) and pour concrete around the conduits to form the duct banks. Once the PVC conduits are installed, slurry backfill would be imported, placed, and compacted. A road base backfill or slurry concrete cap would be installed, and the disturbed road surface would be restored in compliance with local permits. While the completed trench sections are being restored, additional trench lines would be opened. This process would continue until the underground portion of the work is complete.

Manhole/Vault Installation

SDG&E would excavate and install concrete vaults/manholes during trenching for the duct banks. These vaults/manholes would be used to pull cable through the conduits and splice the cables together during construction. During operation, vaults/manholes would provide access to the underground cables for maintenance, inspections, and repairs.

Vaults/manholes would be constructed of concrete and designed to withstand the maximum credible earthquake in the area and heavy truck-traffic loading.

Cable Pulling, Splicing, and Termination

After completing conduit construction, SDG&E would install cable. To pull the cable through the ducts, a cable reel is placed at one end of the section, and a pulling rig is placed at the other end. Each segment of cable would be pulled into the duct using a pull rope. A lubricant would be applied to the cable as it enters the duct to decrease friction during pulling. Mobile equipment including trucks and generators would be positioned adjacent to the vault/manhole openings to facilitate cable splicing.

Use of Helicopters

Helicopter use is anticipated during construction of TL 6965. A light- or medium-lift construction helicopter would be used during installation of the overhead conductor cable and may be used for installation of poles. Helicopter operation would occur during specific daytime construction activities. The Existing Substation staging yard would be used for helicopter take-offs and landings, storage, and refueling. Helicopter use would be compliant with all applicable usage permits, including the Federal Aviation Administration (FAA) and Caltrans.

3.5.2.2 Access

TL 6965

Existing dirt access roads within and along SDG&E's Transmission Corridor would be used to the maximum extent feasible during construction of the new 69-kV power line. At approximately 16 pole locations, the existing access road would be adjusted to accommodate the new pole

construction and maintain necessary vehicular access. In addition, overland travel to approximately three structures (poles 5, 33, and 48) would occur during construction; construction vehicles would drive to the structures without requiring any grading, but may require vegetation trimming and/or mowing. Overland travel would occur for a total distance of approximately 150 feet and a width of approximately 12 feet. Additionally, 2-foot-wide footpaths would be required to poles 36, 41, and 42. The footpaths would be 30 feet, 60 feet, and 45 feet long, respectively. A new permanent access road would be required to pole 40. The access road would be approximately 330 feet long and range in width from 12 to 14 feet.

At Salt Creek Substation, the existing dirt road extending northwesterly down the slope from the Transmission Corridor to the existing sewer access road would be improved from the southern terminus of TL 6965, extending down into the proposed Salt Creek Substation site to accommodate the 69-kV underground package. This access road would provide secondary temporary construction access to the Salt Creek Substation site.

SDG&E's Transmission Construction & Maintenance (TCM) personnel maintain existing access roads within the Transmission Corridor and on SDG&E's fee-owned land around the Existing Substation. Annual road maintenance enables crew and equipment access to associated poles. Depending on the timing of TCM's annual maintenance activities in this area, construction activities for the Proposed Project may include resurfacing access roads (minor grading) and/or vegetation clearing to maintain some or all of the existing access roads that serve the proposed improvements.

Pursuant to SDG&E's NCCP, SDG&E is not required to mitigate for impacts to vegetation resulting from road maintenance (i.e., re-establishing) to existing access roads. Cleared vegetation would be removed from the Proposed Project area and disposed of at an approved off-site facility. Vehicles would remain within existing access roads, previously disturbed areas, and designated temporary work areas, where feasible. Only a small amount of overland travel would be required, as detailed above. At drainage crossing locations along the access roads, the blade of the equipment would be lifted 25 feet on either side of the drainage to avoid impacts to the drainage. Temporary bridging of drainage crossings may be used wherever feasible or necessary.

TL 6910 Loop-In

As the TL 6910 loop-in would occur within existing ROWs and within the proposed Salt Creek Substation, no new access roads would be required.

3.5.2.3 Work Areas

Table 3-2 summarizes the permanent and temporary workspaces for TL 6965 and the TL 6910 loop-in. As identified in Table 3-2, the workspace requirements for the TL 6910 loop-in are included within the disturbance areas for the TL 6965 undergrounding and the proposed Salt Creek Substation. No additional disturbance would result from TL 6910 loop-in work.

All work areas for TL 6965 overhead work would be accessed by construction equipment using existing access roads, new work pads, and/or adjusted access roads, or by overland travel. The

work areas for the TL 6965 underground component are illustrated in Figure 3-7, Salt Creek Substation Temporary and Permanent Impact Areas. All temporary work areas for TL 6965 would be restored to pre-construction conditions, as needed and as appropriate, following completion of construction. Further discussion of the restoration process is provided in Section 4.4, Biological Resources.

3.5.2.4 Poles and Structures

To accommodate construction equipment and activities during installation of power poles and structures, temporary construction areas would be cleared and/or graded at each location to provide a safe working space for placing equipment, vehicles, and materials. Work areas for each pole type would vary. Approximately 24 pole locations would require creation of a permanent work pad, of which approximately 16 would involve adjusting the existing access road to accommodate the new pole and to maintain necessary vehicular access. Work areas with an approximately 10-foot radius would be established at the directly embedded galvanized steel pole structures that do not require establishment of a permanent work pad. Approximately 75-foot by 75-foot work areas would be established at each of the 10 pier foundation poles. An approximately 150-foot by 150-foot work area would be established at each of the three cable poles that would be installed east of the proposed Salt Creek Substation. However, the work areas would occur within the work area for TL 6965 undergrounding, and would not result in additional disturbance. Furthermore, an additional area for staging and operation of vehicles and equipment may be required around the cleared work area.

3.5.2.5 Guard Structures

Temporary guard structures would be required at locations where stringing work would cross existing facilities, such as other utilities, roadways, and highways, to ensure minimum clearances are maintained while conductors are being pulled. Different types of guard structures may be used, depending on site conditions. Guard structures may consist of a single wood pole with a cross-beam attached to side extensions, or a two-pole wood structure with a cross-beam. In some locations, such as paved areas, a bucket or boom truck may be used as a guard structure. Guard structures using poles would require excavating holes using a truck-mounted auger. Poles would be installed using a line truck, and the soil would be backfilled around each pole. Upon completion of overhead construction, these guard structures would be pulled and removed, and holes would be backfilled.

Along the 5-mile-long alignment, approximately 33 wooden guard structures would be used at locations where the power line crosses public roads or existing utility lines. As mentioned above, bucket or boom trucks may be used, which would decrease this number. Guard structures are necessary to provide for safety while the conductor is pulled through the line.

3.5.2.6 Stringing Sites

Approximately 14 stringing sites would be established to provide a safe working space while installing overhead conductors and underground cables. These stringing sites would generally be located near designated 69-kV poles, as indicated in Table 3-1. The majority of these

stringing site areas would be located within the existing 120-foot-wide Transmission Corridor. Stringing sites would be located along existing access roads where feasible, and would range in size from approximately 2,000 to 9,000 square feet. Stringing sites would typically be located at a distance of approximately four times the height of the pole away from the base of the pole, in line with the conductor's alignment. The anticipated 14 stringing sites would require approximately 1.3 acres of land. Stringing sites would be located along TL 6965 as necessary to accommodate installation of the overhead conductor, and would be located within existing disturbed areas. Some incidental grading of the stringing sites may occur if necessary.

Temporary work areas used to install the underground duct banks would be used to facilitate pulling of the underground cables.

3.5.3 Existing Substation Modification

3.5.3.1 Construction Method

There would be no site development work at the Existing Substation. The existing 69-kV rack, where all the construction work would take place, allows room for the new TL 6965 circuit position. A breaker position for TL 6964 exists and is currently designated TL 6910. The circuit breaker and circuit position would be relabeled to reflect the circuit name change.

The 69-kV rack would be expanded by one bay position. This would allow moving TL 643 to the new bay position. The new circuit breaker for TL 6965 would be installed in the vacant position previously occupied by TL 643.

Below-Grade Construction

Below-grade work would include foundations for the steel structure and equipment. Concrete trucks, backhoes, and loaders would be used for the foundation and below-grade work.

Above-Grade Construction

Once below-grade foundation construction is complete, major equipment and structures would be installed and anchored on their respective foundation. The following steps would be taken to install above-grade equipment:

- The 69-kV rack extension would be erected. This would consist of steel structures, disconnects, and insulators.
- The 69-kV circuit breakers would be installed on their foundations.

The power lines would be completed and connected inside the Existing Substation following final installation of substation structures and equipment.

3.5.3.2 Access

Proposed Existing Substation modifications would occur within the Existing Substation footprint; therefore, no new access roads would be required. Existing access to the Existing Substation is provided via San Miguel Road.

3.5.3.3 Work Area

Proposed Existing Substation modifications would occur within the Existing Substation footprint, and no additional work areas would be required.

3.5.4 Staging Yards/Helicopter Fly Yard

Three temporary staging areas were identified that would be used for the Proposed Project: one at the Existing Substation on SDG&E fee-owned property; one on the west side of Eastlake Parkway within the Transmission Corridor between SR-125 and Eastlake Parkway; and another on the north side of Hunte Parkway between Discovery Falls, Eastlake Parkway, and Crossroads Street. Alternative staging area locations were identified within the Olympic Training Center, which would include five potential alternative staging yards. Staging yard locations are illustrated in Figure 3-3, Project Overview.

Based on the three staging yards, approximately 11.7 acres of temporary impacts for staging would occur. The staging yards would be used for pole assemblage, open storage of material and equipment, construction trailers, portable restrooms, parking, refueling areas for vehicles and construction equipment by a mobile fueling truck, and temporary overhead power for construction. Construction workers would typically meet at the staging yard each morning and park their vehicles at the yard. The helicopter fly yard/incidental landing area would be used for helicopter take-offs and landings.

The substation pad would also be used for staging during construction of the Salt Creek Substation. An approximately 6-foot-high chain-link security fence (with screening slats or mesh at the Hunte Parkway and Eastlake Parkway staging yards) and a locking gate would enclose each staging yard.

3.5.4.1 Salt Creek Substation

After the substation pad is graded, the pad area would be used for staging the majority of construction materials, equipment, and vehicles used to construct the proposed Salt Creek Substation facilities. No additional grading or disturbance would be required to use the substation pad as a temporary staging area during construction.

Temporary security fencing would be required during construction. The site would have an 8-foot-tall chain-link fence and gate locked for security purposes. Following site development, a masonry perimeter wall would be installed to secure the site.

3.5.4.2 Hunte Parkway Staging Yard

Additional staging would be located at the proposed Hunte Parkway Yard, approximately 0.5 mile west of the proposed Salt Creek Substation site, as depicted in Figure 3-3, Project Overview. Approximately 8 acres of a 22-acre previously graded pad would be used for staging during construction of the Proposed Project. A temporary overhead power line would be installed at this staging yard. The entire Hunte Parkway yard would be enclosed by an approximately 6-foot-high chain-link security fence with screening slats or mesh and locking gate. Minor grading of approximately 30 CY of cut and fill is estimated to occur for access only.

A temporary 30-foot-wide concrete driveway would be installed on the southern side of Crossroads Street, approximately 300 feet east of its intersection with Eastlake Parkway. Installing the driveway would require minor saw cutting and off-site removal of existing asphalt pavement, sidewalk, and concrete curb. This driveway may require minor temporary modifications to parkway landscape irrigation. After completion of all construction activities, the driveway would be removed, and the sidewalk and curb would be reinstalled, approximating its original condition.

3.5.4.3 Existing Substation Staging Yard and Helicopter Fly Yard

Staging for construction would also occur at an existing SDG&E-owned staging yard located at the Existing Substation. This staging yard would also be used as the helicopter fly yard/incidental landing area during construction to allow for take-off and landings, refueling, and other related activities.

The staging yard at the Existing Substation would occupy approximately 2 acres. It was used by SDG&E for staging purposes during previous projects. This site was previously disturbed; therefore, no grading and/or slope stabilization is anticipated. The Existing Substation is presently enclosed by an access road gate requiring valid badge access. An 8-foot-high chain-link security fence with security gate encloses the facility.

3.5.4.4 Eastlake Parkway Staging Yard

A staging yard would be located on the west side of Eastlake Parkway. The Eastlake Parkway staging yard would be approximately 1.7 acres and be located between Eastlake Parkway and SR-125. The southeastern portion of this site was previously used as a staging yard for other projects and would not require additional grading. The entire Eastlake Parkway staging yard would be enclosed by an approximately 6-foot-high chain-link security fence with screening slats or mesh and locking gate. The northwestern portion of the staging yard may require minimal grading, including approximately 1,300 CY of cut and 600 CY of fill, as noted in Table 3-3, Estimated Grading Quantities.

3.5.4.5 Olympic Training Center Staging Yard

Five potential alternative staging yards within the Olympic Training Center were evaluated to provide backup and flexibility during construction if staging yard availability changes prior to construction. The five potential staging yards were previously disturbed; therefore, no grading is anticipated. The staging yards would be enclosed by chain-link fencing with one or more security gates.

3.5.5 Traffic Control

The Proposed Project would require approval of traffic control plans and Encroachment Permits from the City of Chula Vista and Caltrans for work within the public ROW prior to the start of such construction. Compliance with traffic control plans and the conditions of the Encroachment Permits would ensure the safe movement of vehicle traffic during construction near public streets and freeways.

3.5.6 Erosion and Sediment Control and Pollution Prevention during Construction

Projects that disturb 1 acre or more of soil are required to obtain coverage under the California State Water Resources Control Board's (SWRCB) General Permit for Storm Water Discharges Associated with Construction Activity Order No. 2009-0009-DWQ (General Permit). To obtain coverage under the General Permit, permit registration documents, including a Notice of Intent, SWPPP, risk assessment, site map, certification, and annual fee must be submitted electronically to the SWRCB prior to initiating construction activities. Two SWPPPs would be prepared for the Proposed Project: a traditional SWPPP for the Salt Creek Substation component and a linear SWPPP for the TL 6965 and distribution facilities outside of the Salt Creek Substation property. The SWPPPs would include the following:

- Identification of pollutant sources and non-storm-water discharges associated with construction activity.
- Specifications for BMPs that would be implemented, inspected, and maintained during construction of the Proposed Project to minimize erosion and the potential for accidental releases, and to minimize pollutants in the runoff from the construction areas, including pollutants from storage and maintenance areas and building materials laydown areas.
- Specifications for spill response and implementation.
- A record of training provided to persons responsible for implementing the SWPPP.
- Requirements for reporting and record keeping.
- A plan for water sampling and analyzing pollutants to ensure that the Numeric Action Levels are met and that Numeric Effluent Limitations are not exceeded.

In addition, as the weather dictates, a specific Rain Event Action Plan would be prepared for all phases of construction. During construction, the San Diego RWQCB would oversee and inspect for compliance with the Construction General Permit for the SWRCB. Refer to Section 4.7, Hydrology and Water Quality, for additional discussion. In addition, a Spill Prevention, Control, and Countermeasure (SPCC) Plan would be prepared prior to Proposed Project construction and would be implemented to ensure that any potential release or spill of hazardous materials during construction is properly handled to reduce potential impacts to a less-than-significant level. All construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures) would be disposed of in accordance with all applicable federal, state, and local laws.

3.5.7 Clean-Up and Post-Construction Restoration

SDG&E would restore all areas that are temporarily disturbed by Proposed Project activities (including stringing sites, structure removal sites, and staging areas) to approximate pre-construction conditions following completion of construction, as needed and appropriate. Revegetation in certain areas would not be possible due to vegetation management

requirements related to fire safety. Restoration could include reseeding, planting replacement vegetation, or replacement of structures (such as fences), as appropriate. In addition, all construction materials and debris would be removed from the Proposed Project area and recycled or properly disposed of off-site. SDG&E would conduct a final survey to ensure that clean-up activities are successfully completed as required.

3.5.8 Equipment

On-road and off-road equipment required during construction of the Proposed Project are presented in the following section. For a list of construction equipment and usage, refer to Table 3-5.

Table 3-5: Standard Construction Equipment and Usage

Equipment Type	Equipment Use
Air Compressor	• Operate air tools
Asphalt Grinder	• Grind asphalt
Backhoe	• Excavate, construct, backfill
Bobcat	• Excavate trenches
Boom Truck	• Use as guard structure • Lift/set steel
Boom Truck with Trailer	• Deliver steel, disc, panels, insulators
Bucket Truck/Manlift	• Set steel • Install equipment • Use as guard structure
Bulldozer	• Demolition • Grade pads and access roads • Excavate and backfill walls
Bull Wheel Tensioner	• Control conductor at pulling tension during pulling operation
Cable Dolly	• Pull cable
Cable Dolly (trailer)	• Transport reels of conductor (no engine; can be pulled by assist truck)
Compactor	• Compact soil • Clear • Grub • Finish

Equipment Type	Equipment Use
Concrete Saw	• Cut and saw concrete
Concrete Truck	• Footing fill (665 cubic yards [CY]; 9 CY per trip)
Construction Truck	• Transport trenching and conduit installation crew
Crane	• Lift • Place materials • Position structures
Crane (30T)	• Handle material • Load/set galvanized poles • Manlift
Cat Track Hoe	• Excavate
Pick-Up Truck	• Transport workers
Delivery Trucks	• Transport equipment
Digger/Boom Truck with Material Trailer	• Dig holes • Set galvanized poles • Install anchors • Handle material • Store tools
Drill Rig with Augers	• Excavate trenches • Construct foundation
Dump/Haul Truck	• Transport demo, import and export material
Dump Truck with Compressor & Emulsion Sprayer	• Street repair
Excavator	• Demolition • Excavate • Load material
Flatbed Truck	• Haul materials (including poles)
Flatbed Truck (2-ton)	• Deliver poles to site
Foreman Pick-Up Truck	• Transport foreman and light materials • Provide communication with radio
Fork Lift/Skid Steer Loader	• Move rebar, equipment, masonry, and other material
Handheld Compactor	• Compact soil
HD Flatbed with Reel Carriers	• Pull cable

Equipment Type	Equipment Use
Helicopter	• Transport, place, and install transmission line and overhead conductor
Large Crane	• Set transformer and switchgear • Erect tower
Line Assist Truck	• Pull cable/connections
Loader	• Demolition • Load dump trucks
Material/Crew Truck	• Transport crew, tools, and materials
Mechanic Truck	• Maintain and refuel equipment
Oil Processing Rig	• Used for transformer oil processing
Pickup Truck	• Transport construction personnel • Assist trenching and conduit crew
Pick-Up Truck (¾-ton or 1-ton)	• Transport and support construction personnel and workers • Assist trenching and conduit crew
Pickup with Saw Cut Trailer	• Saw cut pavement
Puller	• Pull conductor into position or duct and secure it at the correct tension
Reel Trailer	• Feed new conductor to the pulling and tensioner • Collect old conductor
Relay/Telecommunication Van	• Transport and support construction personnel
Road Grader/Blade	• Upgrade roads
Roller	• Repair street
Scraper	• Grade pads and access roads
Splice Trailer	• Store splicing supplies
Splice Trailer (UG Cable)	• Store splicing supplies
Spreader	• Spread asphalt
UG Combo Truck	• Pull cable and connections
UG Puller Trailer (7,000-pound)	• Pull cable
Vacuum Pump	• Removes moisture from transformer oil
Water Truck	• Suppress dust and condition soil

Equipment Type	Equipment Use
Wiring Truck	• Hold spools of wire • Transport workers

UG = Underground

Source: SDG&E

On-road vehicles required during construction would include haul trucks for material delivery and import/export of fill material. For details on the total number of truck trips required to construct each of the Proposed Project's components, refer Section 4.3, Air Quality, of this PEA. During construction, delivery and maintenance trucks are anticipated to travel to and from the staging areas approximately one to two times per week during peak construction activities.

Anticipated off-road equipment that would be used to construct each Proposed Project component, along with its approximate duration of use, is provided in Section 4.3, Air Quality.

3.5.9 Personnel

It is anticipated that approximately 15 to 35 workers would be employed to support construction of the various Proposed Project components. Approximately 35 workers would be on-site during site development. Approximately 10 to 25 workers could be on-site during the balance of the foundation and below-grade work, as well as during construction of the Salt Creek Substation, power line, and distribution facilities. Up to 35 workers would be on-site at any one time during peak construction times. Final testing and checkout would require approximately six to eight electricians and/or engineers.

3.5.10 Schedule

Construction of the Proposed Project is anticipated to require approximately 18 to 24 months from initial site development through energization and testing. Table 3-6, Proposed Construction Schedule, identifies the estimated length of time anticipated to complete construction for each component of the Proposed Project.

Table 3-6: Proposed Construction Schedule

Project Components and Activities	Approximate Duration (work days)	Approximate Start Date*
Salt Creek Substation Site Development		
• Demolition	15	9/4/2014
• Grading and Road Improvements	90	9/4/2014
• Retaining Walls	30	9/11/2014

Project Components and Activities	Approximate Duration (work days)	Approximate Start Date*
• Storm Drain System and Erosion Control	40	10/20/14
• Public Improvements and Access Road Paving	20	12/22/14
• Substation Concrete Masonry Walls	20	11/24/2014
Substation Facility Construction		
• Below Grade	120	1/2/2015
• Wiring	90	7/9/2015
• Telecom	60	7/9/2015
• Erect Steel	60	5/25/2015
• Equipment Installation	45	5/27/2015
• 69-kV Riser Pedestal	18	7/1/2015
• Terminate Underground 69-kV	18	11/13/2015
• Controls and Relays	40	10/9/2015
• Complete Landscaping	40	12/9/2015
• Testing	40	1/2/2016
• Energizing (TL 6965)	5	2/21/2016
• Energizing (TL 6910)	5	3/1/2016
• Cut Over	15	3/8/2016
TL 6965		
• Roads and Foundation	66	12/15/2014
• Foundation Installations	30	3/17/2015
• Pole Installations	60	4/28/2015
• String Conductor	23	7/21/2015
• Trench and Conduit	30	8/21/2015
• Cable Installation	30	10/2/2015
TL 6910 Loop-In		
• Foundation Installations	45	2/9/2015
• Pole Installations	10	4/13/2015
• Trench and Conduit	30	8/10/2015

Project Components and Activities	Approximate Duration (work days)	Approximate Start Date*
• Cable Installation	30	9/21/2015
Distribution Getaways		
• Underground Trench/Conduit/Substructure	94	6/30/2015
• Cable/Conductor Pulling and Tensioning	38	10/22/2015
Existing Substation Modification		
• Substation Below-Grade Construction	20	3/31/2015
• Substation Above-Grade Construction	20	4/28/2015
• Substation Wiring	20	5/26/2015
• Relay Testing	20	12/9/2015
• Existing Substation Side TL 6965 Energization	5	2/21/2016
• 69kV Substation Cutover	15	3/8/2016

Source: SDG&E

* Pending acquisition of all required approvals.

Construction of the proposed Salt Creek Substation would generally occur during normal work hours, Monday through Friday, 7 a.m. to 7 p.m., and between 8 a.m. and 7 p.m. on Saturday; however, some concrete pours may take place during an extended day depending on the size of the pour. Transformer oil filling may necessitate vacuum pulls and oil installation that require continuous work 24 hours per day (3 to 5 days per transformer).

Conductor splicing may require extended work hours due to the time required for continuous splicing. Actual cutovers of the transmission and distribution circuits to the proposed Salt Creek Substation would be dependent on loading requirements and would be performed in a manner that maintains uninterrupted service to customers. This may require part or all of this work to be conducted after normal business hours or on the weekend and/or nights to minimize impacts to schedules and to facilitate cutover work.

3.5.10.1 Salt Creek Substation

Construction of the proposed Salt Creek Substation is anticipated require approximately 18 to 24 months. Site development is proposed to begin as soon as grading permits are obtained; energization is expected in February/March 2016. See Table 3-6, Proposed Construction Schedule.

Distribution

Construction on underground distribution circuits is anticipated to last 6 to 8 months. Underground trenching is estimated to require 5 months and cable pulling is expected to take 2 months. The tasks will overlap, for a total distribution schedule of approximately 8 months.

3.5.10.2 TL 6965

Construction of TL 6965 is anticipated to last 8 to 12 months. Overhead line work is estimated to require approximately 6 to 9 months, and underground trenching and cabling is estimated to take an additional 2 to 4 months.

3.5.10.3 TL 6910 Loop-In

Construction of the TL 6910 loop-in is anticipated to require approximately 2 to 6 months. It is estimated that trench work would take approximately 4 to 6 weeks, and cable installation would require an additional 4 to 6 weeks.

3.5.10.4 Existing Substation Modification

Proposed modifications at the Existing Substation are anticipated to take approximately 5 months. It is estimated that extension of the 69-kV rack and construction of the disconnects and circuit breakers would require approximately 6 to 8 weeks. Changing over the circuits would take approximately 3 weeks, with an additional 4 weeks for testing the equipment and relay settings.

3.6 Operation and Maintenance (Existing and Proposed Substations)

The Proposed Project would consist of construction of a new substation and associated distribution and TL 6910 loop-in facilities, a new power line within an existing transmission corridor, and modifications to the Existing Substation. SDG&E currently operates and maintains the Existing Substation and existing power lines within the existing Transmission Corridor consistent with SDG&E's standard protocols and procedures, including SDG&E's Subregional NCCP, which is described in greater detail in Section 4.4, Biological Resources, and below. No change in SDG&E's typical operations and maintenance protocols and procedures is anticipated or included as part of the Proposed Project. SDG&E's existing protocols and procedures, including SDG&E's Subregional NCCP, were incorporated into the design of the Proposed Project.

Specific SDG&E Subregional NCCP operational protocols, habitat enhancement measures, and mitigation measures incorporated into the Proposed Project are as follows:

- Vehicles would be kept on access roads and limited to 15 miles per hour (mph) (NCCP Section 7.1.1, 1).
- No wildlife, including rattlesnakes, may be harmed, except to protect life and limb (NCCP Section 7.1.1, 2).
- Feeding of wildlife is not allowed (NCCP Section 7.1.1, 4).

- No pets are allowed within the ROW (NCCP Section 7.1.1, 5).
- Plant or wildlife species may not be collected for pets or any other reason (NCCP Section 7.1.1, 7).
- Littering is not allowed, and no food or waste would be left on the ROW or adjacent properties (NCCP Section 7.1.1, 8).
- Measures to prevent or minimize wild fires would be implemented, including exercising care when driving and not parking vehicles where catalytic converters can ignite dry vegetation (NCCP Section 7.1.1, 9).
- Field crews shall refer all environmental issues, including wildlife relocation, dead or sick wildlife, or questions regarding environmental impacts to the Environmental Surveyor. Biologists or experts in wildlife handling may be necessary to assist with wildlife relocations (NCCP Section 7.1.1, 10).
- All SDG&E personnel would participate in an environmental training program conducted by SDG&E, with annual updates (NCCP Section 7.1.2, 11).
- The Environmental Surveyor shall conduct pre-activity studies for all activities occurring in natural areas, and shall complete a pre-activity study form, including recommendations for review by a biologist and construction monitoring, if appropriate. The form shall be provided to the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS), but does not require their approval (NCCP Section 7.1.3, 13).
- The Environmental Surveyor shall flag boundaries of habitats to be avoided and, if necessary, the construction work boundaries (NCCP Section 7.1.3, 14).
- The Environmental Surveyor shall approve activity prior to working in sensitive areas where disturbance to habitat may be unavoidable (NCCP Section 7.1.4, 25).
- In the event SDG&E identifies a covered species (listed as threatened or endangered by federal or state agencies) of plant within the temporary work area (10-foot radius) surrounding a power pole, SDG&E shall notify USFWS (for Federal Endangered Species Act [ESA] listed plants) and CDFW (for California ESA listed plants) (NCCP Section 7.1.4, 28).
- The Environmental Surveyor shall conduct monitoring as recommended in the pre-activity study form (NCCP Section 7.1.4, 35).
- Supplies, equipment, or construction excavations where wildlife could hide (e.g., pipes, culverts, pole holes, trenches) shall be inspected prior to moving or working on/in them (NCCP Section 7.1.4, 37 and 38).
- Fugitive dust shall be controlled by regular watering and speed limits (NCCP Section 7.1.4, 39).

- During the nesting season, the presence or absence of nesting species (including raptors) shall be determined by a biologist who would recommend appropriate avoidance and minimization measures (NCCP Section 7.1.6, 50).
- Maintenance or construction vehicle access through shallow creeks or streams is allowed. However no filling for access purposes in waterways is allowed (NCCP Section 7.1.7, 52).
- Staging/storage areas for equipment and materials shall be located outside of riparian areas (NCCP Section 7.1.7, 53).

The following discussion describes the activities required for the long-term operation and maintenance of the Proposed Project once it is in service.

3.6.1 Salt Creek Substation

Once construction is complete, the proposed Salt Creek Substation would be unattended. The substation would be monitored and controlled by SDG&E's Remote Control Center, so no new full-time staff would be required for operation and/or maintenance of the facilities. A perimeter wall would enclose the proposed Salt Creek Substation, and all access gates would be locked to prevent the entry of unauthorized individuals. Access would be restricted further by posting signage on the exterior and at the entryway to the Salt Creek Substation.

SDG&E would regularly inspect, maintain, and repair the Salt Creek Substation, power line, and distribution facilities following completion of Proposed Project construction. Typical operation and maintenance activities would involve routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service. SDG&E would perform aerial and ground inspections of the Salt Creek Substation facilities and patrols above ground components annually.

Routine maintenance is expected to require approximately six trips per year by crews composed of two to four people. Routine operations would require one or two workers in a light utility truck to visit the Salt Creek Substation on a daily or weekly basis. It is anticipated that one annual major maintenance inspection would occur, requiring an estimated 10 personnel. This inspection would take approximately 1 week to complete. Nighttime maintenance activities are not expected to occur more than once per year.

3.6.1.1 Distribution

Maintenance may include replacement of damaged cables or connectors. Maintenance crews may consist of four to six personnel and require a tool truck, cable truck, assist truck, and/or troubleshooter truck. Routine inspections would occur annually to identify connection problems or inspection for equipment degradation.

3.6.2 TL 6965 and TL 6910 Loop-In

Existing TL 6910 is routinely inspected, maintained, and repaired as needed. These on-going activities would continue and would also include new transmission facilities associated with the Proposed Project. Operation and maintenance activities for the TL 6965 and TL 6910 loop-in

would involve routine preventive maintenance and emergency procedures to maintain service continuity.

Aerial and ground inspections of Proposed Project facilities would be performed in conjunction with inspections of existing lines within the Transmission Corridor. Above-ground components would be inspected routinely for corrosion, equipment misalignment, loose fittings, and other mechanical problems. SDG&E would use helicopters to visually inspect overhead facilities. SDG&E patrols each electric power line annually, or as required, via helicopter. SDG&E may also use helicopters to deliver equipment, position poles and structures, string lines, and position aerial markers, as required by FAA regulations.

SDG&E's Transmission Department would perform aerial patrols biannually and ground patrols every 3 years for the power line, not including substation maintenance. For maintenance activities, a light to medium lift helicopter, such as a Hughes 500 or AStar, would be used to fly over the power line.

New structures on TL 6965 would be constructed using standardized polymer insulators. This would reduce estimated facility maintenance, maximize equipment life span potential, and ultimately reduce outage potential.

For new construction or maintenance, the helicopter would need a flat staging area for fueling, as well as for picking up material, equipment, and personnel. The area required for small helicopter staging is generally 100 feet by 100 feet. The crew size needed varies from four to 10 crew members, two helicopter staff, and a water truck driver to apply water for dust control at the staging area. Most helicopter operations require only 1 day.

3.6.2.1 Pole or Structure Brushing

SDG&E maintains a clear working space around certain poles, pursuant to requirements found within GO 95 and Public Resources Code (PRC) Section 4292. SDG&E keeps working areas clear of shrubs and other obstructions for fire prevention purposes. Although the majority of the facilities for the Proposed Project would be located within an urbanized area, pole or structure brushing may be needed periodically to reduce the risk of fire or to allow for aerial inspection. These areas would be kept clear of shrubs and other obstructions for inspection and maintenance purposes. Inspection for brushing needs would typically occur on an annual basis. Such clearing activities would generally be achieved through the use of chain saws, weed trimmers, rakes, shovels, and/or brush-clearing hooks. Poles fitted with specific non-exempt hardware (e.g., fuses, switches) would be brushed to a radius of 10 feet from the base of the pole. Power poles with external grounds would be brushed to a radius of 5 feet from the pole base. Pole brushing is anticipated to be required at approximately 12 poles that are part of the Proposed Project.

3.6.2.2 Equipment Repair and Replacement

Conductors, insulators, switches, transformers, lightning arrest devices, line junctions, or other electrical equipment may be supported on various SDG&E poles or structures. Repairs or replacement activities to such components may be required to ensure that SDG&E is able to

continue to provide uniform, adequate, safe, and reliable service. Such repairs may include removing or replacing certain components (i.e., existing transmission structures) with similar equipment that is larger or stronger, generally at the same location or a nearby location. Such repairs or replacements may be needed as the result of age, damage, or necessary change in the size of a conductor. Repair or replacement of such equipment would generally require a crew composed of four personnel and two to three trucks (a boom or line truck, an aerial lift truck, and an assist truck) to gain access to the area of the equipment in need of repair or replacement.

3.6.3 Existing Substation Modification

Once modifications are complete, the Existing Substation would continue to be unattended. The substation is currently monitored and controlled by SDG&E's Remote Control Center, so no new full-time staff would be required for operation and/or maintenance of the facilities.

SDG&E would continue to regularly inspect, maintain, and repair the Existing Substation, power line, and distribution facilities following completion of Proposed Project construction. Operations and maintenance activities would not increase in intensity, frequency, or duration with implementation of the Proposed Project, and would be substantially similar to existing operations and maintenance activities. Typical activities involve routine inspections and preventive maintenance to ensure service reliability, as well as emergency work to maintain or restore service continuity. SDG&E performs aerial and ground inspections of Existing Substation facilities and patrols aboveground components annually. Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems is performed at least every 3 years (per GO 165) for power lines.

Routine maintenance would continue as scheduled and would typically include six trips per year by a two- to four-person crew. Routine operations would continue and typically requires one or two workers in a light utility truck to visit the substation on a daily or weekly basis. It is anticipated that one annual major maintenance inspection would occur, requiring an estimated 10 personnel. Nighttime maintenance activities are not expected to occur more than once a year.

3.6.4 Vegetation Maintenance

Routine vegetation clearing would continue to occur at each substation on an as-needed basis for purposes of safety, access, and aesthetics. Vegetation clearing activities would typically involve the presence of one to two small maintenance vehicles and one or more personnel to clear or trim vegetation to achieve the minimum working space around substation facilities.

SDG&E conducts annual inspection of areas where trees exist within proximity to its electrical facilities. If necessary, tree trimming is conducted using a two-person crew, a one-person aerial lift truck, and a chipper trailer. Due to the urban nature of the area of the Proposed Project, it is anticipated that vehicular access would be available. If vehicle access is not available, the crew would walk to the location where trimming is needed. It is anticipated that annual tree trimming activities can be completed in 1 day, if needed. In addition, vegetation that has a

mature height of 15 feet or taller is not allowed to grow within 10 horizontal feet of any conductor within the ROW for safety and reliability reasons.

3.6.4.1 Application of Herbicides

Herbicides may be used to prevent vegetation that is cleared during brushing activities from re-establishing itself. This activity is currently occurring on a regular basis where permitted within the existing Transmission Corridor. SDG&E typically applies one or more of 16 standard herbicides recommended by the U.S. Fish and Wildlife Service (USFWS) specifically for use by SDG&E.

Herbicide application currently occurs within the Transmission Corridor over a short time duration, and generally involves one person in a pick-up truck. Herbicides are generally applied within the 5- to 10-foot radius around the base of the poles, as needed. It is anticipated that the person performing the work would either walk from the nearest available location to park or would drive a pick-up truck directly to each pole location, if such access is available.

3.7 Anticipated Permits and Approvals

CPUC is the lead California agency for this Proposed Project. SDG&E must comply with CPUC's General Order No. 131-D Section III-B (GO 131-D), which contains the permitting requirements for construction of the Proposed Project. This PEA was prepared as part of an application to obtain a PTC for the Proposed Project. In addition to the PTC, SDG&E may be required to obtain a number of other permits from federal, state, and local agencies. Table 3-7, Anticipated Permit, Approval, and Consultation Requirements, lists the permits, approvals, and licenses that SDG&E anticipates obtaining from jurisdictional agencies.

Table 3-7: Anticipated Permit, Approval, and Consultation Requirements

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose
Federal Agencies		
Implementation of SDG&E's Subregional Natural Community Conservation Plan (NCCP)	U.S. Fish and Wildlife Service	Activities within NCCP coverage areas that impact biological resources (required only for review of Proposed Project; no approval or permit is involved)
State Agencies		
Permit to Construct	California Public Utilities Commission	Authority to construct electric facilities; CEQA lead agency review
National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (NPDES No. CAS000002); Order No. 2009-0009-DWQ	California State Water Resources Control Board (SWRCB)	Storm water discharges associated with construction activities disturbing more than 1 acre of land

Permit/Approval/Consultation	Agency	Jurisdiction/Purpose
General NPDES Permit for Discharges from Utility Vaults & Underground Structures to Surface Waters (NPDES No. CAG990002); Order No. 2006-0008-DWQ	SWRCB	Used to discharge water from utility vaults during operation
Implementation of SDG&E NCCP	California Department of Fish and Wildlife (CDFW)	Activities within NCCP coverage areas (required only for review of Proposed Project; no approval or permit is involved)
Encroachment Permit and Traffic Control Plan	Caltrans	Stringing conductor across SR-125
California Department of Fish and Wildlife Notification	CDFW	Notification of any proposed activity that may substantially modify a river, lake, or stream
Local Agencies		
Encroachment Permit and Traffic Control Plan	City of Chula Vista	Construction within, under, or over city or county road ROWs (ministerial)
Structural Permit	City of Chula Vista	Walls for the access road and substation
Storm Water Management Plan	City of Chula Vista	Storm water discharges associated with construction projects that require a ministerial or discretionary permit within a jurisdiction subject to a Municipal Separate Stormwater Sewer System (MS4) permit from the local Regional Water Quality Control Board (RWQCB); Chula Vista is a co-permittee in the Region 9 RWQCB MS4 permit
Grading/Public Improvement Permit	City of Chula Vista	Grading plans and permit required for Salt Creek Substation and TL 6965 undergrounding

Source: SDG&E

3.8 Project Design Features and Ordinary Construction/ Operations Restrictions

SDG&E has extensive experience constructing, operating, and maintaining electric facilities. Over time, SDG&E has developed standard practices and protocols that are ordinarily incorporated into project design, construction, operation, and maintenance activities. These ordinary construction and operating restrictions have been developed and refined over time, reflecting SDG&E's experience managing electric facilities in the communities SDG&E serves. Among other things, restrictions are designed to comply with applicable regulations, conform to BMPs within the industry, avoid potential environmental impacts, meet internal SDG&E goals and standards, and respond to community input. These restrictions, which are designed to avoid and minimize potential environmental impacts before they occur, are incorporated into the design of the Proposed Project.

Many of these practices are applied to all of SDG&E's projects and activities to ensure compliance with relevant laws, regulations, and ordinances, as well as to minimize adverse effects on the surrounding environment. SDG&E maintains an environmental compliance management program to allow for implementation of these activities including documentation, monitoring, and enforcement during each phase of project development, as appropriate. SDG&E and its contractors are required to implement the measures described below.

The following project design features and ordinary construction and operating restrictions identified by SDG&E are part of the Proposed Project's design, and would be implemented during construction, operation, and maintenance of the Proposed Project.

- **Air Quality Management**

  The Proposed Project would avoid and minimize impacts to air quality through implementation of the following measures:

  - All unpaved demolition and construction areas shall be wetted at least three times daily during construction, and temporary dust covers shall be used to reduce dust emissions and meet San Diego Air Pollution Control District (SDAPCD) Rule 55 requirements.
  - SDG&E or its contractor shall keep the construction area sufficiently dampened to control dust caused by construction and hauling, and at all times provide reasonable dust control of areas subject to windblown erosion.
  - All loads shall be secured by covering or use of at least 2 feet of freeboard to avoid carry-over.
  - All materials transported off-site shall be either sufficiently watered or securely covered.
  - All earthmoving or excavation activities shall be discontinued during period of high winds (i.e., greater than 25 mph) to prevent excessive amounts of fugitive dust generation.
  - All equipment shall be properly tuned and maintained in accordance with manufacturer specifications.
  - SDG&E or its contractor shall maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after 5 minutes when not in use. Construction activities will be phased and scheduled to avoid emissions peaks, and equipment use will be curtailed during second-stage smog alerts.
  - To the extent possible, power will be obtained from power poles (the electrical grid) rather than the use of large generators on-site.
  - Low- and non-volatile organic compound (VOC)-containing coatings, sealants, adhesives, solvents, asphalt, and architectural coatings shall be used to reduce VOC emissions.
  - All areas where construction vehicles are parked, staged, or operating shall be visibly posted with signs stating "No idling in excess of 5 minutes."

- Catalytic converters shall be installed on all heavy construction equipment, where feasible.
- Deliveries will be scheduled during off-peak traffic periods to reduce trips during the most congested periods of the day, where feasible.
- Construction sites will be posted with signs providing a contact number for complaints. All complaints will be addressed in a timely and effective manner.

- **SDG&E's Natural Community Conservation Plan**

  The Proposed Project would avoid and minimize impacts to biological resources through implementation of the SDG&E Subregional NCCP, which is a comprehensive conservation-based approach that provides more effective species protection than project-by-project conservation planning would achieve. The SDG&E Subregional NCCP establishes a mechanism for addressing biological resource impacts incidental to the development, maintenance, and repair of SDG&E facilities within the SDG&E Subregional NCCP coverage area. The Proposed Project is located within the SDG&E Subregional NCCP coverage area.

  The SDG&E Subregional NCCP includes a Federal ESA Section 10(A) permit and a California ESA Section 2081 Memorandum of Understanding (for incidental take) with an Implementation Agreement with USFWS and CDFW, respectively, for the management and conservation of multiple species and their associated habitats, as established according to the federal and state ESAs and California's NCCP Act. The NCCP's Implementing Agreement confirms that the mitigation, compensation, and enhancement obligations contained in the Agreement and SDG&E Subregional NCCP meet all relevant standards and requirements of the California ESA, the federal ESA, the NCCP Act, and the Native Plant Protection Act with regard to SDG&E's activities in the Subregional NCCP Plan Area.

  Pursuant to the SDG&E Subregional NCCP, SDG&E conducted pre-construction studies for all activities occurring off of existing access roads in natural areas. An independent biological consulting firm surveyed all Proposed Project impact areas and prepared a Pre-Activity Study Report (PSR) outlining all anticipated impacts related to the Proposed Project. The Proposed Project would include monitoring for all components, as recommended by the PSR and outlined in the SDG&E Subregional NCCP, as well as other avoidance and minimization measures outlined in the NCCP's Operational Protocols. Prior to the commencement of construction, a verification survey of the Proposed Project disturbance areas will be conducted, as required by the SDG&E Subregional NCCP.

  Biological monitors will be present during construction to ensure implementation of the avoidance and minimization measures set forth in the NCCP. If the previously delineated work areas must be expanded or modified during construction, the monitors will survey the additional impact area to determine if any sensitive resources will be impacted by the proposed activities, to identify avoidance and minimization measures, and to document any additional impacts. Any additional impacts would be included in a Post-Construction Report (PCR) to calculate the appropriate mitigation, which generally includes site enhancement or credit withdrawal from SDG&E mitigation bank credits. When construction is complete, the

biological monitor will conduct a survey of the entire Proposed Project area to determine actual impacts from construction. The PCR will determine how much site enhancement and credit withdrawal from the SDG&E mitigation bank would be required to address impacts from activities related to the Proposed Project. These impact and mitigation credit calculations will be submitted to USFWS and CDFW as part of the NCCP Annual Report, pursuant to requirements of the NCCP and the NCCP Implementing Agreement.

- **SDG&E Water Quality Construction BMP Manual**

  SDG&E's Water Quality Construction BMPs Manual (BMP Manual) was created to organize SDG&E's standard water quality protection procedures for various specific actions that routinely occur as part of SDG&E's ongoing construction, operations, and maintenance activities. The primary focus of most BMPs is the reduction and/or elimination of water quality impacts during construction. The BMPs described within the BMP Manual were derived from several sources, including California guidelines and Caltrans Water Quality BMPs. The BMP Manual will be used during construction (by way of preparation and implementation of the SWPPPs), operation, and maintenance of the Proposed Project to ensure that all SDG&E and relevant government-mandated water quality standards are fully complied with.

- **Storm Water Pollution Prevention Plan**

  The SWPPPs prepared for construction of the Proposed Project, per the state's General Construction Permit, include provisions for identifying hazardous materials, reporting spills, and training workers. Section 4.9, Hydrology and Water Quality, provides detail on SWPPP requirements. Post-construction drainage and water quality impacts will be addressed in the site design and Storm Water Management Plan (SWMP) in accordance to the City of Chula Vista's Standard Urban Storm Water Mitigation Plan (SUSMP) to comply with the Regional Municipal Separate Storm Water Sewer System (MS4) Permit (i.e., Clean Water Act [CWA] Section 402, National Pollutant Discharge Elimination System [NPDES] Permit). Any long-term maintenance activities required in the Water Quality Technical Report prepared for the Proposed Project would be in accordance with the City's SUSMP.

- **Spill Prevention, Control, and Countermeasure (SPCC) Plans**

  When the transformers at the proposed Salt Creek Substation site contain more than 1,320 gallons of mineral oil, an SPCC Plan for the facility is required. This plan establishes procedures, methods, equipment requirements, and worker training to prevent spilled or leaked oil from reaching navigable waters.

- **Visual Screening of Staging Yards**

  The Hunte Parkway and Eastlake Parkway staging yards will have opaque mesh installed along the fence to screen the view of the staging yard from public vantage points, such as roads and residences.

- **Restoring Appearance of Temporarily Disturbed Areas**

  When Proposed Project construction is complete, all temporarily disturbed terrain will be restored, as needed and as appropriate, to approximate pre-construction conditions. Revegetation would be used, where appropriate (revegetation in certain areas is not possible due to vegetation management requirements related to fire safety) to re-establish a natural-appearing landscape and reduce potential visual contrast between disturbed areas and the surrounding landscape.

- **Soil Stabilization**

  Once temporary surface disturbances are complete, areas that would not be subject to additional disturbance would be stabilized to control soil erosion.

- **Mufflers**

  Functioning mufflers will be maintained on all equipment.

- **Helicopter Use**

  Helicopter usage will occur during daylight hours and conform to acceptable hours for construction activities, as outlined within the San Diego County Noise Code and the City of Chula Vista Noise Ordinance. All helicopter use will comply with local, state, and federal regulations.

- **Resident Notification**

  Residents within 50 feet of Proposed Project activities will receive notification of the start of construction at least 1 week prior to the start of construction activities within that area.

- **Construction Noise**

  During construction, SDG&E will conform to the San Diego County Noise Code for work within unincorporated San Diego County, and the City of Chula Vista Noise Ordinance for work within the City of Chula Vista, to the extent practicable. SDG&E will meet and confer with County of San Diego and/or City of Chula Vista staff, as needed, to discuss any anticipated deviations from these requirements.

- **Unanticipated Discovery of Human Remains**

  If human remains are encountered during construction, SDG&E staff comply with California law (Health and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99). This law specifies that work stop immediately in any areas where human remains or suspected human remains are encountered. The appropriate agency and SDG&E will be notified of any such discovery. SDG&E will contact the Medical Examiner at the county coroner's office. The Medical Examiner has two 2 working days to examine the remains after being notified by SDG&E. Under some circumstances, a determination may be made without direct input from the Medical Examiner. When the remains are determined to be Native American, the Medical Examiner has 24 hours to notify the Native American Heritage Commission (NAHC).

The NAHC will immediately notify the identified Most Likely Descendant (MLD), and the MLD has 24 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 24 hours, the area of the property must be secured from further disturbance. If there are disputes between the landowner and the MLD, the NAHC will mediate the dispute to attempt to find a resolution. If mediation fails to provide measures acceptable to the landowner, the landowner or his/her authorized representative shall re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

- **Temporary Trail Detours**

  Where feasible, temporary detours will be provided for trail users. Signs will be provided to direct trail users to temporary trail detours. If a trail detour is not feasible, the trail will be closed and signs will alert trail users of the closure.

- **Hazardous Materials Management**

  SDG&E will follow its Management of Contaminated Equipment and Materials, Hazardous Materials Business Plan, which addresses the evaluation of potentially hazardous materials that may be present due to former or present on-site uses, as well as hazardous waste that may be generated during construction or operation of proposed land uses.

- **Standard Traffic Control Procedures**

  Standard traffic control procedures are measures to address potential disruption of traffic circulation during construction activities and address safety issues. SDG&E will implement a traffic control plan, prepared by the Proposed Project's engineer or contractor and subject to approval by the City of Chula Vista and Caltrans, which will ensure that potential construction-related traffic impacts remain at a level below significance.

- **Encroachment Permits**

  SDG&E will obtain the required Encroachment Permits from the City of Chula Vista and Caltrans, and will ensure that proper safety measures are in place while construction work is occurring near public roadways. (No encroachment onto County of San Diego roads is anticipated.) These safety measures include flagging, proper signage, and orange cones to alert the public to construction activities near the roadway.

- **City of Chula Vista Ministerial Permits**

  SDG&E will obtain ministerial permits from the City of Chula Vista that are applicable to the proposed Salt Creek Substation. (No ministerial permits from the County of San Diego are anticipated.)

- **Sulfur Hexafluoride (SF_6) Management**

  The proposed Salt Creek Substation would be an air-insulated substation. Equipment containing sulfur hexafluoride (SF_6) gas will only be used for transmission circuit breakers.

SDG&E SF_6 mitigation strategies will be implemented during operation and maintenance of SF_6-containing equipment installed as part of the Proposed Project. These strategies are as follows:

- Recording company-wide SF_6 purchases, use, and emissions rates to comply with the U.S. Environmental Protection Agency's (USEPA) rule on Electrical Transmission and Distribution Equipment Use (Mandatory Reporting of Greenhouse Gases, 40 Code of Federal Regulations [CFR] Part 98, Subpart DD) and the California Air Resources Board's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (California Code of Regulations [CCR] Title 17, Sections 95350–95359).
- Continuing to participate in the USEPA Sulfur Hexafluoride Partnership.
- Implementing a recycling program.
- Training employees on safe and proper handling of SF_6.
- Continuing to report greenhouse gas emissions to The Climate Registry.
- Implementing SDG&E's SF_6 leak detection and repair program. This program includes monthly visual inspections of each gas circuit breaker (GCB), which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure that no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and SF_6 decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies:
  - spraying a leak-detection agent onto common leak points, including O rings, gaskets, and fittings;
  - using a field-monitoring device (sniffer) to detect the presence of SF_6 gas; and
  - Using a Flir's leak-detection camera to detect the presence of SF_6 gas when the above two methods are unsuccessful in finding a leak.

- **SDG&E's Wildland Fire Prevention and Fire Safety Standard Practice**

The northern and southern portions of the Proposed Project alignment would be located within the "Very High" fire threat designation as indicated on the SDG&E Fire Threat Zone

Map (2011). The mapped areas are based on CALFIRE's Fire and Resource Assessment Program (FRAP) data. These areas would be constructed consistent with SDG&E's current design standards to improve service reliability in fire-prone areas during extreme weather conditions. SDG&E's current design standards include increasing conductor spacing to improve line clearances; installing steel poles to withstand extreme winds; installing self-supporting angle structures, which eliminate guying; and installing longer polymer insulators to minimize the potential of electrical faults caused by contamination, which would improve system reliability.

Fire threat ranking is based on relative fuel conditions, topography, and expected fire behavior. Weather plays an important role in fire risk as well. Extreme weather conditions do not occur all the time, and the status of the fire risk varies based on the daily conditions such as humidity, air temperature, winds, and fuel moisture. These conditions are monitored and assessed daily by SDG&E. Therefore, even though the Proposed Project may be located within the geographic boundaries of an area designated as a "Very High" fire threat zone, the fire risk may not be especially high. Proposed Project construction activities can occur on those days of less risk and be avoided on particularly high risk days. SDG&E is also pro-active in providing fire mitigation resources as needed, such as water tenders, engines, and fire patrols.

There is the risk of fires being accidentally initiated during construction activities. SDG&E's current operating protocol, Electric Standard Practice (ESP) 113.1, Wildland Fire Prevention and Fire Safety Standard Practice, includes requirements for carrying emergency fire suppression equipment; conducting "tailgate meetings" that cover fire safety discussions, restrictions on smoking, and idling vehicles; and restricting construction during red flag warnings. The Proposed Project will comply with SDG&E's project-specific Construction Fire Plan (Fire Plan), included in Appendix 4.8-B. The Fire Plan was developed by wildland fire professionals, and identifies appropriate avoidance and minimization measures and operating procedures. This plan takes into account local fuels, weather, and topography in the mitigation measures to reduce the threat of an ignition of a wildland fire.

The Fire Plan exceeds fire prevention measures required by the California Forest Practices Rules; Title 14, Article 8. Fire risk mitigation measures include training and briefing all personnel working on the Proposed Project in fire prevention and suppression methods, and conducting a fire prevention discussion at each morning's safety meeting. A "fire watch" or "fire patrol" will be assigned specifically to ensure that risk mitigation and fire preparedness measures are implemented, and to ensure immediate detection of a fire, which may include the nearby staging of a fire engine. Additionally, prescribed fire tools and backpack pumps with water will be kept within 50 feet of work activities, in accordance with SDG&E standard protocol, to ensure the capability for rapid extinguishment in the event of a fire.

Weather and fire danger will be monitored daily by company meteorologists and wildland fire specialists to provide timely and immediate communication of significant changes that could impact the Proposed Project. As noted above, no work will occur during times of high

fire threat, and if conditions change after commencing construction, work will cease in periods of extreme fire danger, such as red flag warnings issued by the National Weather Service or other severe fire weather conditions as identified by SDG&E. Implementation of the Proposed Project's Fire Plan, in addition to standard SDG&E operational procedures and protocols, will ensure that the risk of fire during construction remains less than significant.

- **Other SDG&E Environmental Procedures and Protocols**

  SDG&E will also employ the following during construction, operation, and maintenance of the Proposed Project:

  - SDG&E's Approved Herbicides and Application Procedures, as necessary, to include identification and use of approved herbicides and adherence to measures for the proper application of herbicides during operation and maintenance activities.
  - Compliance with applicable state and local regulations covering grading, water quality, and erosion.
  - Implementation of engineering structural design specifications to withstand physical stresses from wind, geologic, and hydrologic conditions.

3.9 Applicant-Proposed Measures

In addition to SDG&E's ordinary operating restrictions, SDG&E has identified Proposed Project-specific Applicant-Proposed Measures (APMs) that will further avoid or minimize potential impacts to sensitive resources. As part of the Proposed Project, SDG&E plans to incorporate the APMs included in Table 3-8, Applicant-Proposed Measures. APMs are intended to allow for design flexibility by avoiding or minimizing environmental impacts as needed and as appropriate. SDG&E would conduct the design, construction, operation, and maintenance of the Proposed Project in accordance with these APMs. The various resource chapters detail how and when the APMs would be applied to ensure that impacts remain at a less-than-significant level.

Table 3-8: Applicant-Proposed Measures

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
Biological Resources						
APM-BIO-1	SDG&E shall coordinate with the wildlife agencies to implement the avoidance and minimization measures presented in the "Mitigation Methods" section of the California Department of Fish and Wildlife (CDFW) guidance (CDFG 2012b), as needed and as appropriate, to avoid impacts to western burrowing owl (WBO). No less than 14 days prior to initiating ground-disturbance activities, an initial "take" avoidance survey shall be completed on-site and within a 500-foot buffer (CDFG 2012b). Based on the guidelines put forth by CDFW, if WBO occupancy on-site is confirmed, SDG&E shall coordinate with CDFW to develop mitigation methods for occupied burrows and habitat that may be directly impacted, which may include preparing a CDFW-approved "Burrowing Owl Exclusion Plan" and "Mitigation Management Plan" (CDFG 2012b) and the option of using the 11.0959 acres of purchased conveyance land credits in the Otay Ranch Preserve in lieu of the purchase of additional lands.	This measure would ensure that impacts to WBO are avoided, minimized, and mitigated in accordance with current CDFW guidance.	✓	✓		

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
Cultural Resources						
APM-CUL-1	A qualified archaeologist shall attend pre-construction meetings, as needed, to consult with the excavation contractor concerning excavation schedules, archaeological field techniques, and safety issues. Project personnel shall receive training regarding the appropriate work practices necessary to effectively implement the Applicant-Proposed Measures (APMs), including the potential for exposing subsurface cultural resources and paleontological resources. This training shall include procedures to be followed upon the discovery or suspected discovery of archaeological materials, including Native American remains, as well as paleontological resources. The requirements for archaeological monitoring shall be noted on the construction plans.	This measure would ensure that an archaeological construction-monitoring program is in place in the event that undiscovered buried archaeological resources are encountered during ground-disturbing activities.		✓	✓	
APM-CUL-2	Monitoring shall occur during proposed pole replacement/improvement activities for Poles 1, 28, 29, 30, 33, 36, 38, 39, 46, 47, and 48. These poles are located adjacent to previously recorded resources (CA-SDI-4529, CA-SDI- 4897, CA-SDI-7197, CA-SDI-12067, CA-SDI-12909, and CA-SDI-14225). Monitoring shall also occur during vegetation removal or ground-disturbing activities at Stringing Sites SS-1, -2, -3, -5, -6, and -14. These are located	This measure would ensure that an archaeological construction-monitoring program is in place in the event that undiscovered buried archaeological resources are encountered during ground-disturbing activities.		✓	✓	

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
	within sites CA-SDI-4527, CA-SDI-4897, and CA-SDI-14225. In the event cultural resources are encountered during ground-disturbing activities, the archaeologist shall have the authority to divert or temporarily suspend ground disturbance to allow evaluation of potentially significant cultural resources. The archaeologist shall contact SDG&E's Cultural Resources Specialist and Environmental Project Manager at the time of the discovery. The archaeologist, in consultation with SDG&E's Cultural Resource Specialist, shall determine the significance of the discovered resources. SDG&E's Cultural Resources Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. For significant cultural resources, preservation in place shall be the preferred manner of mitigating impacts. For resources that cannot be preserved in place, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts.					
APM-CUL-3	If ground-disturbing activities, such as grading, are to be conducted along access roads, monitoring shall occur where the access road crosses the site or is located with the boundaries of a site, and equipment blades shall be lifted when traversing the site. Monitoring shall occur for ground-	This measure would ensure that an archaeological construction-monitoring program is in place in the event that undiscovered buried archaeological resources		✓	✓	

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
	disturbing activities associated with access road improvements within the Existing Substation property. Additionally, all vehicles shall remain on existing dirt roads and new access identified for the Proposed Project. If needed, additional overland travel or access routes shall be reviewed, and appropriate avoidance measures and monitoring shall be implemented.	are encountered during ground-disturbing activities.				
APM-CUL-4	A qualified paleontologist shall attend pre-construction meetings, as needed, to consult with the excavation contractor concerning excavation schedules, paleontological field techniques, and safety issues. A qualified paleontologist is defined as an individual with a Master's of Science or Doctor of Philosophy in paleontology or geology who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology and paleontology of Southern California, and who has worked as a paleontological mitigation project supervisor in the region for at least 1 year. The requirements for paleontological monitoring shall be noted on the construction plans.	This measure would ensure that paleontological monitoring occurs when ground-disturbing activities are undertaken.	✓	✓	✓	
APM-CUL-5	A paleontological monitor shall work under the direction of the qualified Proposed Project paleontologist, and shall be on-site to observe excavation operations that involve the original cutting of previously undisturbed deposits with high paleontological resource sensitivity (i.e., Mission Valley and	This measure would ensure that paleontological monitoring occurs when ground-disturbing activities are undertaken.	✓	✓	✓	

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
	Otay Formations). A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.					
APM-CUL-6	In the event that fossils are encountered, the Proposed Project paleontologist shall have the authority to divert or temporarily halt construction activities in the area of discovery to allow recovery of fossil remains in a timely manner. The paleontologist shall contact SDG&E's Cultural Resource Specialist and Environmental Project Manager at the time of discovery. The paleontologist, in consultation with SDG&E's Cultural Resource Specialist, shall determine the significance of the discovered resources. SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume.	This measure would ensure that paleontological resources are recovered as necessary.	✓	✓	✓	

APM Number	Description	Justification	Proposed Project Components			
			Salt Creek Substation	TL 6965 and TL 6910 Loop-In	Existing Substation Modifications	Staging Yards
APM-CUL-7	Because of the potential for recovery of small fossil remains, it may be necessary to set up a screen-washing operation on-site. If fossils are discovered, the paleontologist (or paleontological monitor) shall recover them, along with pertinent stratigraphic data. Because of the potential for recovery of small fossil remains, such as isolated mammal teeth, recovery of bulk sedimentary matrix samples for off-site wet screening from specific strata may be necessary, as determined in the field. Fossil remains collected during monitoring and salvage shall be cleaned, repaired, sorted, cataloged, and deposited in a scientific institution with permanent paleontological collections. A final summary report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils. The report shall also include an itemized inventory of all collected and catalogued fossil specimens.	This measure would ensure that paleontological resources are recovered and catalogued as necessary.	✓	✓	✓	

Source: SDG&E