B. Description of Proposed Project

B.1 Introduction

The Project would primarily consist of the construction, operation, and maintenance of a new 25 mile 115 kV subtransmission line to connect the existing Valley and Ivyglen Substations and the construction of the new Fogarty Substation to provide supplementary electrical services to the City of Lake Elsinore area.

In addition to the construction of the proposed subtransmission line and Fogarty Substation, the Project includes:

- Improvements to the Valley and Ivyglen Substations to accommodate the proposed subtransmission line, including the installation of new 115 kV switching and protective equipment to terminate the proposed subtransmission line at the respective sites.
- Tie-ins between the new Fogarty Substation and existing subtransmission and telecommunications lines
- Installation of a new telecommunications line alongside the proposed subtransmission line
- Transfer of distribution facilities
- Stockpiling and/or disposal of old electrical distribution line poles
- Disassembly of Dryden substation

B.2 Proposed Project Location

The Project would be located in southwestern Riverside County (Figure A-1). The proposed subtransmission line would traverse the City of Perris, the City of Lake Elsinore, and the Glen Ivy/Corona Lake area. The Valley Substation is located at the southwest corner of State Highway 74 East and Menifee Road, approximately 1.25 miles east of the City of Perris. The Ivyglen Substation is located on the south side of Temescal Canyon Road between Maitri Road and I-15.

The proposed Fogarty Substation would be located in the northern portion of the City of Lake Elsinore across from the temporary Dryden Substation. The total parcel size is approximately 6.6 acres with the Kings Highway right-of-way (ROW) forming the northern boundary, Hoff Avenue forming the southern boundary, and the Dolbeer Road ROW and Terra Cotta Road forming the eastern and western boundaries, respectively. Figure B.2-1 shows the proposed Fogarty Substation location.

B.3 Project Components

The Project's key components are listed in Table B.3-1, followed by a discussion of each element. The four project elements are:

- Valley-Ivyglen 115 kV Subtransmission Line ("proposed subtransmission line")
- Telecommunications System
- Fogarty Substation

- Valley and Ivyglen Substation Improvements

Table B.3-1 Summary of Project Components

Valley-Ivyglen 115kV Subtransmission Line
• Construction of a new 115 kV electrical subtransmission line, approximately 25 miles long, connecting the existing Valley and Ivyglen Substations Subtransmission Line Poles • Transfer of existing distribution circuits along portions of the proposed subtransmission line to new 115 kV poles • Removal of the previously used, no longer needed poles • Construction of approximately 620 light-duty steel (LDS) poles would be required for construction of the proposed subtransmission line route. • Balance poles required for the proposed subtransmission line route would be tubular steel poles (TSPs); pole height would range between 80 and 100 feet in height (above the concrete footing), depending on their specific location. • Bolting of approximately 45 TSPs to a steel-reinforced (rebar) concrete footing, approximately 6 feet in diameter and at least 22 feet deep below the ground surface. Conductors and Insulators • Construction of three 954 stranded aluminum conductors (SAC) and a single 4/0 aluminum conductor steel reinforced (ACSR) ground conductor. If needed, 954 ACSR would be used at locations requiring higher tension. Conductors would be installed on 115 kV polymer insulator assemblies. Roads • The applicant estimates construction of approximately 16 miles of new, unpaved roads
Telecommunications System
• Installation of approximately 25 miles of fiber optic cable to provide data communication between the Valley and Ivyglen Substations • Integration of the telecommunications line on the proposed subtransmission line poles, with the exception of approximately 600 feet of telecommunication line that would be installed underground • Telecommunications equipment improvements at the Valley and Ivyglen Substations • Installation of two fiber optic cable segments between the Fogarty Substation and the existing fiber optic cable between the Elsinore and Ivyglen Substations • Telecommunications Lines • Installation of a new telecommunications line connecting Valley and Ivyglen Substations would follow the same route as the proposed subtransmission line except for underground entrances into the Valley and Ivyglen Substations. • Installation of an optical fiber cable would be attached to new poles along the proposed subtransmission line route. • Installation of one telecommunications line segment exiting the Valley Substation for approximately 300 feet from the substation fence to a riser pole (Segment E-1) • Installation of one telecommunications line segment approximately 300 feet along Temescal Canyon Road into the Ivyglen Substation (Segment W-10) • Installation of two fiber optic cable segments between the Fogarty Substation and the existing fiber optic cable between Elsinore and Ivyglen Substations. • Installation of a total of approximately 1,200 feet of underground fiber optic cable • Installation of all new fiber optic cable in new underground conduits. • Telecommunications System Improvements • Installation of two 24-strand fiber optic cable segments between the Fogarty Substation and the existing fiber optic cable between Elsinore and Ivyglen Substations. • Installation of new telecommunications equipment Installation of an equipment rack in the Fogarty Substation Mechanical-Electrical Equipment Room (MEER) would hold telecommunications equipment for the substation.
Fogarty Substation
• Construction of a new 115/12 kV substation. The Fogarty Substation would be an unattended, automated, low-profile, 56 mega volt-ampere (MVA) 115/12 kV substation • Installation of three tubular steel poles (TSPs) to support two new 115 kV subtransmission line segments approximately 200 feet each, connecting the Valley-Elsinore-Ivyglen 115 kV subtransmission line to the Fogarty Substation • Construction of six underground 12 kV distribution circuits • Construction of two 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breakers on concrete foundations Fogarty Substation Equipment • Addition of two 115 kV subtransmission lines. • Inclusion of six underground 12 kV distribution circuits (four existing and two new) would be connected from the substation to Terra Cotta Road. • Construction of one prefabricated metal MEER measuring approximately 12 feet high, 36 feet long, and 20 feet wide to house control and relay racks, battery and battery chargers, AC and DC distribution switchboards and telecommunication equipment.

Table B.3-1 Summary of Project Components

Fogarty Substation Lighting • Installation of high-pressure sodium maintenance lights to be located in the switchracks, around the transformer banks, and in areas of the substation where maintenance activity may take place. Fogarty Substation Perimeter Features • Installation of a perimeter substation security screen, enclosed on four sides by a minimum 8 foot high perimeter wall, consistent with community standards and subject to the Applicant's safety requirements. • Installation of a metal access gate for the security screen which would be approximately 20 feet wide and a minimum of 8 feet high and fitted with a band of at least three strands of barbed wire affixed near the top of the perimeter wall inside the substation for increased security Fogarty Site Access • Construction of an improved temporary driveway access at the front of the substation within the ROW of Terra Cotta Road
Valley Substation Improvements
• Construction of an A-frame type line dead end structure 30 feet wide by 29 feet high at vacant position in the 115 kV open switchrack area for terminating the proposed subtransmission line • Construction of two 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breakers on concrete foundations and four 115 kV, 2000 Ampere (continuous) rated horizontal mounted, center side break disconnecting switches on steel support structures, for circuit breaker isolation
Ivyglen Substation Improvements
• Addition of one 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breaker on a concrete foundation • Addition of three 115 kV, 2000 Ampere (continuous) rated horizontal mounted, center side break disconnect switches on steel support structures • Addition of three 115 kV surge arresters mounted on steel pedestal supports subtransmission line and substation equipment protection within a control room

B.3.1 Valley-Ivyglen 115 kV Subtransmission Line

The proposed subtransmission line was subdivided into three regions to facilitate impact analysis and comparison of alternatives: Eastern Region (City of Perris area), Central Region (City of Lake Elsinore area) and Western Region (Glen Ivy/Corona Lake area).

For descriptive purposes, the Applicant divided the proposed subtransmission line into nine line segments. Designations for each line segment include a letter (E = Eastern Region, C = Central Region, and W = Western Region), followed by a number representing the alternative segment within the region. Figure B.3-1 provides an overview of all the route segments. Route segments comprising the proposed subtransmission line are summarized below from east to west with corresponding aerial figures in parenthesis:

Segment E-1 exits the Valley Substation from the south and runs approximately 7.5 miles west along the north side of an existing 500 kV transmission line ROW, across I-215, until it reaches Highway 74 (Figures B.3-2 and B.3-3).

Segment C-1 proceeds southwest along the northwest side of Highway 74 from the existing 500 kV transmission ROW to Conard Avenue (Figures B.3-3 and B.3-4).

Segment C-3 proceeds from Highway 74 and travels northwest on Conard Avenue; north on Rostrata Avenue; west on Mermack Avenue; north on Stonehouse Road; and west on a dirt road and an existing 12 kV line to El Toro Road (Figure B.3-4).

Segment C-4 follows El Toro Road for approximately 1 mile; turns west and runs approximately 0.5 miles along the north side of Nichols Road (Figures B.3-4 and B.3-5).

Segment C-6 continues west near Nichols Road, crosses I-15, and then moves back onto Nichols Road for approximately 1 mile to an existing 33 kV line ROW (Figures B.3-4 and B.3-5).

Segment W-1 follows an existing 33 kV line ROW for approximately 4 miles from Nichols Road to Hostettler Road (Figure B.3-5).

Segment W-4 proceeds from the intersection of Hostettler Road and Desperado Drive, follows the south side of I15 northwest along an existing 33 kV line to an existing 12 kV line southeast of Indian Truck Trail (Figure B.3-5 and B.3-6).

Segment W-8 crosses over I-15 a short distance southeast of Indian Truck Trail, near an existing 12 kV line crossing (Figure B.3-6).

Segment W-10 proceeds from the crossing over of I-15 southeast of Indian Truck Trail, continues on the north side of I-15 between I-15 and Temescal Canyon Road toward the I-15 and Temescal Canyon Road overpass and into the Ivyglen Substation (Figure B.3-6).

In locations where the proposed subtransmission line route follows the existing distribution lines, the Applicant would transfer the existing 33 kV and 12 kV distribution lines to the new 115 kV line poles. The previously used poles would then be removed. Conditions along each route segment may dictate minor changes in segment length and pole placement pending completion of final engineering and site analysis. This DEIR evaluates location of the subtransmission line within a corridor, and therefore, it should cover enough area to allow for minor changes made during the final design process. However, any changes to the Project as submitted in the PEA will be separately evaluated to confirm that they have been covered by the DEIR.

B.3.1.1 Subtransmission Line Poles

A majority of the new poles for the proposed subtransmission line route would be light-duty steel (LDS) poles up to 75 feet long, approximately 10 feet of which would be buried (Figures B.3-7, B.3-8, and B.3-9). Approximately 620 LDS poles would be required for construction of the proposed subtransmission line route.

The balance of the poles required for the proposed subtransmission line route would be tubular steel poles (TSPs). These poles (Figure B.3-9) would range between 80 and 100 feet in height (above the concrete footing), depending on their specific location. TSPs would be bolted to a steel-reinforced (rebar) concrete footing, approximately 6 feet in diameter and at least 22 feet deep below the ground surface. The footing could add up to two additional feet to the total height of the installed TSPs. Approximately 45 TSPs would be required for construction of the proposed subtransmission line.

The specific height and spacing of poles along the length of the proposed subtransmission line route would be determined upon final engineering and constructed in compliance with CPUC General Order (GO) 95 and other factors including but not limited to the items listed below.

- Length of span between poles (average span of 200 feet; 100 foot minimum span and 500 foot maximum span)
- Ground clearances pursuant to GO 95 and SCE construction standards
- Overhead clearances pursuant to GO 95 and SCE transmission construction standards
- Wind loading
- Distance between angle points
- Number and voltage of electrical lines installed on the poles

Insert 1 of 2

Figure B.2-1 Alternative Project Sites

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.2-1 Alternative Project Sites

Insert 1 of 2

Figure B.3-1 Proposed Subtransmission Route Segments

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-1 Proposed Subtransmission Route Segments

Insert 1 of 2

Figure B.3-2 Proposed Subtransmission Route Segment E-1

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-2 Proposed Subtransmission Route Segment E-1

Insert 1 of 2

Figure B.3-3 Proposed Subtransmission Route Segments E-1 and C-1

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-3 Proposed Subtransmission Route Segments E-1 and C-1

Insert 1 of 2

Figure B.3-4 Proposed Subtransmission Route Segments C-3, C-4 and C-6

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-4 Proposed Subtransmission Route Segments C-3, C-4 and C-6

Insert 1 of 2

Figure B.3-5 Proposed Subtransmission Route Segments C-4, C-6, W-1 and W-4

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-5 Proposed Subtransmission Route Segments C-4, C-6, W-1 and W-4

Insert 1 of 2

Figure B.3-6a Proposed Subtransmission Route Segments W-4, W-8 and W-10

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-6a Proposed Subtransmission Route Segments W-4, W-8 and W-10

Insert 1 of 2

Figure B.3-6b Proposed Subtransmission Route Segments W-4, W-8 and W-10

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-6b Proposed Subtransmission Route Segments W-4, W-8 and W-10

Insert 1 of 2

Figure B.3-7 Typical New LDS Poles

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-7 Typical New LDS Poles

Insert 1 of 2

Figure B.3-8 Typical LDS* for 115 kV Subtransmission and Distribution Lines

Figure B.3-9 Typical TSP* with Double 115 kV Subtransmission Line

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-8 Typical LDS* for 115 kV Subtransmission and Distribution Lines

Figure B.3-9 Typical TSP* with Double 115 kV Subtransmission Line

B.3.1.2 Conductors and Insulators

The proposed subtransmission line would require three 954 stranded aluminum conductors (SAC) and a single 4/0 aluminum conductor steel reinforced (ACSR) ground conductor. If needed, 954 ACSR would be used at locations requiring higher tension. Conductors would be installed on 115 kV polymer insulator assemblies.

B.3.1.3 Roads

Construction and maintenance of the proposed subtransmission line would require access to each of the planned pole locations. Public roads and ROWs or privately owned and maintained roads adjacent to the proposed subtransmission line route would be used where possible to provide construction and maintenance access.

Two types of roads would be required for construction and maintenance of the proposed subtransmission line: access roads and spur roads. Access roads originating from the main transport route would run along a portion of the proposed subtransmission line route between pole sites. Where needed, spur roads would lead from access roads and dead-ends at one or more pole sites. Each pole site would require an access or spur road for construction as well as for operation and maintenance. The specific location of new access roads and spur roads would be determined after completion of final engineering, based on a detailed topographic survey of the proposed subtransmission line route. The Applicant estimates that approximately 16 miles of new, unpaved roads would need to be constructed for the proposed subtransmission line.

Although the exact location of new roads would not be determined until final engineering is completed, a general area is known for most new roads. These new roads would be constructed within a corridor generally delineated for each respective route segment identified in the PEA. Initial environmental surveys for both biological and cultural resources were conducted within corridors along each proposed route segment. These corridors were 200 feet wide (100 feet along each side of projected center line) for biological resources and 400 feet wide (200 feet along each side of projected center line) for cultural resources. Surveying corridors instead of proposed road alignments allows the Applicant to identify potential impacts within these corridors, thus providing an opportunity to avoid sensitive areas during project design. By avoiding sensitive resources during final engineering, potential impacts would be less than significant. Additional surveys would be conducted along route segments or road adjustments resulting from final engineering that extend outside the original survey corridors.

B.3.1.4 Subtransmission Line Staging Areas

A staging area is a physical location where materials and equipment are temporarily stored during construction. Staging areas for the subtransmission line would be located at the existing Valley and Ivyglen Substations as well as the Applicant's San Jacinto Valley Service Center and Rialto facility.

B.3.1.5 Subtransmission Line Right-of-Way

As stated in Section A.1.1, Statement of Objectives, one of the identified objectives is that the Applicant would utilize its property for location of the Project where feasible. Approximately 16 miles of the proposed subtransmission line would be constructed along the Applicant's existing ROW or along public streets. Figure B.3-10 illustrates the Applicant's owned ROW, the Applicant's franchised ROW, and the ROW that would be acquired in order to complete the subtransmission line. Approximately 18 miles of new ROW would be required for construction of the subtransmission line. Table B.3-2 provides the

segment length and location of the ROW that would be acquired for construction of the subtransmission line.

B.3.2 Telecommunications System

A telecommunication system is required for communication and monitoring of the proposed subtransmission line, Fogarty Substation, and Valley & Ivyglen Substation improvements. The telecommunications system primarily consists of a fiber optic cable which allows communication for sensor relays that can operate the circuit when an abnormal condition exists on the subtransmission line. The telecommunications system also allows remote-control operation and monitoring of substation equipment. Improvements to the telecommunication system for the Project include the following:

- Installation of approximately 25 miles of fiber optic cable to provide data communication between Valley and Ivyglen Substations
- Integration of the telecommunications line on the proposed subtransmission line poles, with the exception of approximately 600 feet of telecommunication line that would be installed underground
- Telecommunications equipment improvements at Valley and Ivyglen Substations
- Installation of two fiber optic cable segments between Fogarty Substation and the existing fiber optic cable between Elsinore and Ivyglen Substations

B.3.2.1 Telecommunications Lines

A new telecommunications line connecting Valley and Ivyglen Substations would follow the same route as the proposed subtransmission line except for underground entrances into Valley and Ivyglen Substations. Optical fiber cable would be attached to new poles along the proposed route and would typically be located 26 feet above ground level. The telecommunications line would pass underground at two locations:

- One telecommunications line segment exiting Valley Substation for approximately 300 feet from the substation fence to a riser pole (Segment E-1)
- One telecommunications line segment approximately 300 feet along Temescal Canyon Road into Ivyglen Substation (Segment W-10)

These two segments would comprise approximately 600 feet of underground fiber optic cable and would be installed in new underground conduits.

As part of the Fogarty Substation construction, two fiber optic cable segments would be installed between Fogarty Substation and the existing fiber optic cable between Elsinore and Ivyglen Substations. The proposed telecommunication line connections would result in one communication path between Fogarty and Elsinore Substations and a second communication path between Fogarty and Ivyglen Substations (which would provide backup in the event of service disruption—e.g. fallen pole). The fiber optic cable installation from the Fogarty Substation would pass underground to two separate existing wood riser poles (one located to the east and one to the west), with each of the two fiber optic cable connections approximately 1,200 feet long. A total of approximately 2,400 feet of the fiber optic cable required for Fogarty Substation would be installed underground using new underground conduits.

Insert 1 of 2

Figure B.3-10 Applicant Right-of-Way Acquisition Overview

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-10 Applicant Right-of-Way Acquisition Overview

Table B.3-2 Applicant ROW Acquisition Summary Table

Segment	Segment Location	Approximate Length (in miles)	Key Number On Figure B.3-10	Affected Route Area Requiring ROW	Approximate Length of new ROW required for construction of Project
E-1	Valley Substation to Hwy-74	7.5	1	Parcel East of San Jacinto Road From M0-T4 to San Jacinto Road	1,350 Feet
			2	North of San Jacinto River Btwn M5-T2 and M5-T3	1,500 Feet
			3	East of Keystone Drive East and West of M6-T1	1,300 Feet
			4	West of Keystone/ N of McPherson Rd Btwn M6-T2 and M6-T3	200 Feet
			5	West of Theda Street 1,400 Feet East of Hwy-74	350 Feet
C-1	W/S of Hwy-74, 500kV to Peach Ave	4.7	6	Proceeds southwest along the northwest side of Hwy-74, from the existing 500 kV transmission ROW to Conard Avenue	4.7 Miles
C-1	W/S of Hwy-74, Peach Ave to Conard Ave				
C-3	Conard Avenue to El Toro Road	1.6	7	From Hwy-74, along Conard Avenue, to Rostrata Avenue	1,300 Feet
			8	From Conard Avenue, along Rostrata Avenue, to Mermack Avenue	3,300 Feet
			9	From Mermack Avenue (300'), along Stonehouse Road (1,400')	1,700 Feet
			10	Stonehouse Road west to El Toro Road	300 Feet
C-4	W/S El Toro Rd, to 0.3M E/O I-15	1.2	11	Follows El Toro Road for approx. 1 mile; turns west and runs approx. 0.5 miles along north side of Nichols Road	1.2 Miles
C-6	N/S Nichols Road across I-15	1.1	12	Continues west near Nichols Road, crosses I-15, and then back onto Nichols Road for approx. 1 mile to an existing 33 kV line ROW	1.1 Miles
W-1	N/S Nichols Road to Hostettler Road	3.6	13	Follows an existing 33 kV line ROW for approx. 4 miles from Nichols Road to Hostettler Road	3.6 Miles
W-4	Hostettler Road to Indian Truck Trail	2.7	14	From the intersection of Hostettler Road and Desperado Road, follows the south side of I-15 northwest along an existing 33 kV line to an existing 12 kV line southwest of Indian Truck Trail	2.7 Miles

Table B.3-2 Applicant ROW Acquisition Summary Table

Segment	Segment Location	Approximate Length (in miles)	Key Number On Figure B.3-10	Affected Route Area Requiring ROW	Approximate Length of new ROW required for construction of Project
W-8	Indian Truck Trail Crossing I-15	0.2	15	Crosses over I-15 a short distance southeast of Indian Truck Trail, near an existing 12 kV line crossing	0.2 Miles
W-10	Indian Truck Trail to Ivy Glen Substation	2.4	16	From the crossing over I-15 southeast of Indian Truck Trail; continues on the north side of I-15 between I-15 and Temescal Canyon Road, toward I-15 and Temescal Canyon Road overpass and into the Ivyglen Substation	2.4 Miles
Total New Right of Way Required for construction of Project					18.04 Miles

Source: SCE

B.3.2.2 Telecommunications Equipment

Telecommunications equipment would be installed at Fogarty Substation. An equipment rack installed in the Fogarty Substation Mechanical-Electrical Equipment Room (MEER) would hold telecommunications equipment for the substation. The MEER would contain conduits that connect to off-site fiber optic cables. Telecommunications equipment upgrades would occur at Valley, Ivyglen, and Elsinore Substations to facilitate the new interconnections.

B.3.3 Fogarty Substation

The proposed Fogarty Substation would be an unattended, automated, low-profile, 56 mega volt-ampere (MVA) 115/12 kV substation surrounded by an approximately eight foot tall perimeter wall with an access gate and driveway to the public road. In addition to the installation of three TSPs to modify the existing 115 kV subtransmission line, construction of six underground 12 kV distribution circuits would be needed. The height of the substation electrical equipment would reach approximately 35 feet at its highest point. Figure B.3-11 provides a schematic and visual simulation of the Fogarty Substation.

The Fogarty Substation would also require the installation of electrical equipment needed to operate the substation further described below.

B.3.3.1 Fogarty Substation Equipment

The substation would contain a 115 kV switchrack, two 28 MVA 115/12 kV transformers, two 4.8-megavolt-ampere reactive (MVAR) 12 kV capacitor banks, a 12 kV switchrack, and two 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breakers on concrete foundations. The substation would be connected to two 115 kV subtransmission lines. Six underground 12 kV distribution circuits (four existing and two new) would be connected from the substation to Terra Cotta Road.

The 115 kV switchrack would be a low-profile design with an operating and transfer bus configuration with one line breaker and three sets of group operated disconnects. The bus-tie position would have one line breaker and one set of disconnects. The 12 kV switchrack would be a low-profile design with an operating bus and a transfer bus. The design of the substation would also allow for a second operating

Insert 1 of 2

Figure B.3-11 Proposed Fogarty Substation Site

CLICK HERE TO VIEW FIGURE

Insert 2 of 2

Figure B.3-11 Proposed Fogarty Substation Site

bus, 10 additional 12 kV distribution lines, two additional 28 MVA transformers, two additional 115 kV subtransmission lines, one 115 kV 46.8 MVAR capacitor, and two additional 12 kV 4.8 MVAR capacitors.

One prefabricated metal MEER measuring approximately 12 feet high, 36 feet long, and 20 feet wide would be erected to house control and relay racks, battery and battery chargers, AC and DC distribution switchboards, and telecommunication equipment. The substation would be equipped with a substation automation system which includes one Human Machine Interface (HMI) rack and approximately twelve 19-inch equipment racks.

All equipment and structures at the substation would be electrically grounded in accordance with both the Applicant's and industry standards. Grounding calculations would be based on soil resistivity measurements.

B.3.3.2 Modifications to the Existing Valley-Elsinore-Ivyglen 115 kV Subtransmission Line

The existing Valley-Elsinore-Ivyglen 115 kV Subtransmission Line would be the source line for the Fogarty Substation. This subtransmission line passes through the northern side of the Fogarty Substation parcel (outside the perimeter wall) and parallels the future Kings Highway. The existing line would be interconnected with the Fogarty Substation directly on-site by means of overhead lines supported by three new TSPs with concrete footings. One TSP would be located adjacent to the new substation switchrack, while the other two would be located in the path of the existing subtransmission line and as near to the substation switchrack as practicable (See Figure B.3-11). Additionally, two new overhead 115 kV line segments, approximately 200 feet each, would be constructed within the Fogarty Substation.

As a result of the tie-in, the existing Valley-Elsinore-Ivyglen 115 kV Subtransmission Line would be split into two separate 115 kV subtransmission lines. They would be designated the Valley-Elsinore-Fogarty 115 kV Subtransmission Line and the Fogarty-Ivyglen 115 kV Subtransmission Line.

B.3.3.3 Fogarty Substation Lighting

The new substation would have access and maintenance lighting. The access light would be low-intensity and controlled by photo sensors. Maintenance lights would consist of high-pressure sodium lights located in the switchracks, around the transformer banks, and in areas of the substation where maintenance activity may take place. Maintenance lights would be used only when required for maintenance outages or emergency repairs occurring at night. Maintenance lights would be controlled by a manual switch and would normally be in the off position. The lights would be directed downward and shielded to reduce glare outside the facility.

B.3.3.4 Fogarty Substation Landscaping

The substation site would not be landscaped immediately following construction. Instead, as the surrounding area develops, a plan for substation landscaping would be prepared and would be consistent with community and city standards to the extent that they are not inconsistent with the Applicant's safety standards.

B.3.3.5 Fogarty Substation Perimeter Features

To screen the substation from the public and to secure the facility, the substation would be enclosed on all four sides by a minimum eight foot high perimeter wall and would be consistent with community

standards and subject to the Applicant's safety requirements. The metal access gate would be approximately 20 feet wide and a minimum of eight feet high. All perimeter walls and gates would be fitted with a band of at least three strands of barbed wire affixed near the top of the perimeter wall inside the substation for increased security. The barbed wire would not be visible from outside the perimeter wall. The Applicant would conform to setback requirements in the area.

B.3.3.6 Fogarty Site Access

The substation would be accessed from Terra Cotta Road by a 20 foot wide asphalt/concrete paved driveway. The substation entrance would have a locked gate capable of accommodating two-way traffic.

Construction vehicles would use public roads to access the Fogarty Substation. Substation construction may precede the completion of paving and/or roadway widening improvements to Terra Cotta Road. If so, the Applicant would construct an improved temporary driveway access at the front of the substation within the ROW of Terra Cotta Road. If necessary, the Applicant may also temporarily construct a road within the Kings Highway and Hoff Avenue ROWs to the north and south of the site.

B.3.3.7 Fogarty Staging Area

A staging area is a physical location where materials and equipment are temporarily stored during construction. The Fogarty Substation staging area would be located within the boundaries of the site.

B.3.4 Valley and Ivyglen Substation Improvements

The construction of the proposed subtransmission line would require the installation of new 115 kV switching and protective equipment at both the Valley and Ivyglen Substation termination locations as described below. All Valley and Ivyglen Substation improvements would be constructed within the existing perimeter wall of the substations.

B.3.4.1 Valley Substation

Valley Substation is located in unincorporated Riverside County, at the southwest corner of State Highway 74 East and Menifee Road, approximately 1.25 miles east of the City of Perris (Figures A-1 and B.3-1). Improvements to the Valley Substation would include installing the components listed below within the existing perimeter fencing:

- An A-frame type line dead end structure 30 feet wide by 29 feet high at a vacant position in the 115 kV open switchrack area for terminating the proposed subtransmission line.
- Two 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breakers on concrete foundations and four 115 kV, 2000 Ampere (continuous) rated horizontal mounted, center side break disconnecting switches on steel support structures, for circuit breaker isolation.
- Subtransmission line and substation equipment protection within the existing control and relay building.

B.3.4.2 Ivyglen Substation

Ivyglen Substation is located near the community of Glen Ivy on the south side of Temescal Canyon Road, between Maitri Road and I-15 (Figures A-1 and B.3-1). Improvements to the Ivyglen Substation

would include installing the components listed below. As with the Valley Substation, these components would be located within the perimeter fencing.

- One 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breaker on a concrete foundation
- Three 115 kV, 2000 Ampere (continuous) rated horizontal mounted, center side break disconnect switches on steel support structures
- Three 115 kV surge arresters mounted on steel pedestal supports
- Subtransmission line and substation equipment protection within a control room

B.4 Construction and Schedule

This section describes construction methods to be used for this Project. Design, engineering and construction of the Project would take approximately 12-18 months with all four components of the Project potentially initiating and terminating at various times within the 12-18 month timeframe. Approximately 94 construction workers would be required for construction of all four components of the Project. This total represents the maximum number of construction workers over the 12-18 month timeframe. However, at no point during construction of the Project would all 94 workers be working at the same time due to the sequential nature of construction and specialized labor.

B.4.1 Subtransmission Line Construction

B.4.1.1 Pole Site Preparation

Most pole sites would need minimal site preparation prior to pole installation. The majority of the proposed pole locations would be along the Applicant's existing ROWs or along public roads. Sites may require minor grading, leveling, or clearing to accommodate the new poles. Where new access roads would be necessary, pole sites would be cleared and graded at approximately the same time that access roads would be constructed.

B.4.1.2 Subtransmission Line Pole Installation

LDS poles would be installed in holes bored approximately 24 to 30 inches in diameter and 9 to 10 feet deep into native soil. LDS poles would be installed using a line truck. Once the LDS poles are set in place, bore spoils (soil from holes drilled) would be used to back fill the hole. If the bore spoils are not suitable for backfill, imported clean fill material would be used. Excess bore spoils would be distributed at each pole site or used as backfill to fill holes left after removal of nearby wooden distribution poles.

TSPs would be installed atop 6-foot diameter by 22 foot deep (minimum) cylindrical concrete footings. The hole for the footings would be bored, a steel (rebar) cage would be inserted into the hole, concrete would be poured into the hole to level or above the natural surface (up to 2 feet), and then the pole would be bolted atop the footing. Excess bore spoils would be distributed at each pole site or used as backfill to fill holes left after removal of nearby wooden distribution poles.

B.4.1.3 Wire Pulling

Wire pulling includes all activities associated with installing conductors onto the LDS poles and TSPs. These activities include installing three 115 kV 954 SAC conductors and one 4/0 ACSR ground conductor.

Pulling locations are areas of surface disturbance for installing the line. The dimensions of the area needed for stringing set-ups varies depending upon the terrain. However, a typical stringing set-up is 100 feet by 50 feet, depending on placement of a tensioner with a reel stand truck or a puller. Generally, pulling locations would be in line with the overhead conductors, at a distance approximately three times the height of the pole. Pulling locations would be determined during construction.

B.4.1.4 Access and Spur Roads

Existing roads near and along the proposed subtransmission line route would be utilized to the greatest extent possible. Where necessary, new dirt roads would be constructed to provide access. It is anticipated that approximately 16 miles of new roads would be needed for the proposed subtransmission line. Table B.4.-1 identifies the estimated number of personnel and equipment needed for construction of the access and spur roads for the proposed subtransmission line. Typical earth-disturbing activities are summarized below.

Table B.4-1 Valley-Ivyglen Subtransmission Line Roadway Personnel and Equipment

Number of Personnel	Equipment[1]	Estimated Usage		
		Hours/Day	Days/Week	Total Days
3	2 Crew Trucks (Gasoline)	2	6	50
	2 Light Trucks	2	6	50
	1 Water Truck	2	6	50
	Crawler D6	10	6	50
	Crawler D8	10	6	50
	Motor Grader	5	6	50

Source: SCE 2006
Note:
[1]Fuel for equipment is diesel except where noted.

Re-Grading and Repairing Existing Roads. Existing access and spur roads would be cleared of vegetation and blade-graded to remove potholes, ruts, and other surface irregularities. The existing access and spur roads would be re-compacted to provide a smooth and dense surface capable of supporting heavy equipment. Graded dirt roads would have a maximum drivable width of 12 feet, however in areas with steep terrain requiring tight-radius curves, the Applicant would construct 15-16 foot wide access roads which allow large vehicles sufficient drivable road width to safely negotiate these curves.

Clearing and Grubbing New Dirt Roads. Trees and other vegetation would be removed or trimmed to obtain a minimum 12 feet of clear, drivable width. New dirt roads would be built in accordance with the Applicant's standards. New access and spur roads would be designed to ensure that new roads would be accessible by all construction equipment. New roads would be built with gradients and curves that would permit heavy equipment usage and maneuvering.

The majority of road width construction would be 12 foot wide because of the relatively flat terrain traversed by the Project. Approximately one mile of route Segment E-1 (immediately west of the San Jacinto River) traverses gently rolling hills that may require wider roads (15-16 foot-wide). A short portion of this route through the area (approximately 500 feet) includes Farmland of Local Importance.

Drainage Structures. Drainage structures would be installed to allow for construction traffic usage as well as to prevent road damage and erosion due to uncontrolled water flow. Drainage structures may include wet crossings, water bars, overside drains, pipe culverts, and energy dissipaters. The specific need for and location of drainage systems or similar improvements would be identified during final engineering in combination with a detailed topographic survey of the proposed subtransmission line route.

B.4.1.5 Distribution Line and Pole Removal

Portions of the proposed subtransmission line would be constructed in line with the Applicant's existing 33 kV and 12 kV distribution lines. Along parallel segments, the Applicant will transfer existing distribution lines to the new 115 kV poles. The previously used poles would then be removed.

Distribution line conductors discarded in this process would be delivered to a facility for recycling. The wooden distribution poles would be completely removed and the residual hole backfilled using imported fill in combination with fill that may be available from excavation of holes for the new poles. The removed poles would either be stored at the Applicant's nearest facility for reuse at other locations or, depending on the condition of individual poles, would be delivered to landfills for disposal as non-hazardous waste.

B.4.1.6 Proposed Subtransmission Line Construction Schedule

Construction of the proposed subtransmission line involves the following steps: surveying the subtransmission line route, engineering design based on these surveys, conducting preconstruction environmental surveys, and constructing the proposed subtransmission line. Some of these activities may overlap. The Applicant anticipates that surveying activities would occur over a 3- to 6-month period. Engineering design and physical construction activities, including grading, erecting new poles, and installing conductors, would occur over a 24 month period.

It is estimated that subtransmission line construction would require approximately 24 months of work to complete the project in two phases. The first phase would construct the line from Valley Substation to Collier Avenue and Third Street. The second phase would construct the remaining portion of the line from Collier Avenue and Third Street to Ivyglen Substation. It is anticipated that the second phase will begin shortly following completion of the first phase.

The Applicant would anticipate starting construction activities in 2009 following CPUC approval of the Applicant's application and Permit to Construct. Survey crews would stake the LDS pole and TSP locations, including reference points and centerline hubs. Reference points, centerline hubs, and footing stakes would then be surveyed. Survey crews would also survey limits of grading for footing excavations, new access and spur roads, crane pads, and lay-down areas, if necessary.

After the completion of final engineering designs and preconstruction environmental surveys, construction teams would grade all areas for construction. Other construction teams would auger footings, install steel rebar cages, and pour concrete pole footings.

While on the ground, new LDS poles and new TSPs would be pre-configured with insulators for wire installation. Construction teams would erect the poles and insulators and then install the 115 kV conductors and ground wire.

The proposed subtransmission line would be energized once the Project is completed, including improvements at both the Valley and Ivyglen Substations and the installation of the telecommunication components.

The proposed subtransmission line construction activities would typically occur Monday through Saturday. Generally, work would not be conducted on Sundays, holidays, or evenings, unless necessary. Table B.4-2 identifies the estimated number of personnel and equipment needed for construction of the proposed subtransmission line.

Table B.4-2 Proposed Substation Line Construction Personnel and Equipment

Number of Personnel	Equipment[1]	Estimated Usage		
		Hours/Day	Days/Week[2]	Total Days
30	2 Crew Trucks (Gasoline)	10	6	275
	2 Line Trucks	10	6	275
	2 Light Trucks	10	6	275
	2 Bucket Trucks	10	6	275
	1 Water Truck	10	6	275
	2 Truck Monitored Cranes	10	6	275
	1 Conductor Pulling Machine	10	6	36
	1 Conductor Tensioner (Gasoline)	10	6	35
	1 30 Ton Crane	10	6	30
	2 Backhoes	10	6	200
	1 Drill Rig	10	6	24

Source: SCE 2006
Note:
[1]Fuel for equipment is diesel except where noted
[2]Night and or/ Sunday construction may be necessary for freeway/highway crossings

B.4.2 Telecommunications System Construction

B.4.2.1 Substation Equipment Installation

At Valley Substation, a 19-inch wide rack would be installed in the existing communications room to hold the telecommunications equipment. The communications and control rooms would have conduits for fiber optic cables and conduits to protect relaying equipment.

At Ivyglen Substation, minor additions to existing channel equipment would be made taking approximately three days.

At the proposed Fogarty Substation, new telecommunications equipment would be installed. An equipment rack installed in the Fogarty Substation MEER would hold telecommunications equipment and would contain conduits that connect to off-site fiber optic cables. The underground telecommunication cable would be installed in new underground trenches at the site. A backhoe would excavate an 18-inch wide trench that is 36-inches deep and approximately 1,200 feet long. A 5-inch PVC conduit would be placed in the trench, covered with a layer of slurry, and paved. A vault would be installed at the beginning and the end of each section of trench. The personnel, equipment, and construction schedule for the Fogarty Substation telecommunication system improvements are listed in Table B.4-3.

Table B.4-3 Fogarty Substation Telecommunication Construction Personnel and Equipment

Number of Personnel	Equipment[1]	Hrs/Day	Days/Week	Total Days
Equipment Construction				
2	2 Vans (Gasoline)	7	5	19
Underground Conduit Construction				
3	1 Flatbed Truck	1	5	10
	1 Backhoe	8	5	10
	1 Stake-bed Truck	2	5	10
	1 Crew Truck (Gasoline)	2	5	10
3	1 Bucket Truck	8	5	10
4	1 Reel Truck	8	5	3

Source: SCE 2006
Note:
[1]fuel for equipment is diesel except where noted

B.4.2.2 Fiber Optic Cable Construction

The fiber optic cable installation would consist of both overhead and underground construction. The overhead cable would be installed by attaching a 48-strand fiber optic cable to the new subtransmission line poles with a bucket truck. Rollers would be installed on the poles. A truck with a cable reel would be set up at one end of the section to be pulled, and a truck with a winch would be set up at the other end. Cable would be pulled onto the pole using a pull rope. The cable would then be permanently secured to the poles.

Cable sections may vary in length, depending upon manufacturer and type of cable. An individual reel may contain up to 12,000 feet of cable. The fiber strands in the cable from one section would be spliced to the fiber strands in the cable from the next section.

Underground cable would be installed in new underground conduits using the trenching method. A backhoe would excavate a trench 18 inches wide and 36 inches deep. A 5-inch polyvinyl-chloride (PVC) conduit would be placed in the open trench, covered with slurry, and then covered with back-filled material and compacted. At the beginning and end of each underground section a vault would be installed.

An underground section may be as long as 2,000 feet between pull boxes or vaults. The fiber strands in the cable from one section would be spliced to the fiber strands in the cable from the next section. Four people and two trucks would be needed for installation.

Three underground locations are anticipated along the new telecommunication path between Valley and Ivyglen Substations. The proposed underground segments of the telecommunications line requiring new construction are summarized below.

- Approximately 300 feet exiting Valley Substation from the substation fence to a riser pole (Segment E-1)
- Approximately 300 feet along Temescal Canyon Road into Ivyglen Substation (Segment W-10)
- One telecommunication line segment approximately a half mile west of Valley Substation (Segment E-1)

The proposed underground segments of the telecommunications line requiring new construction for the Fogarty Substation connections are summarized below.

- Approximately 600 feet along Kings Highway (proposed future road) into the east side of Fogarty Substation from the north
- Approximately 600 feet along Kings Highway (proposed future road) into the east side of Fogarty Substation from the south

B.4.2.3 Telecommunications System Construction Schedule

Telecommunications construction related to the proposed subtransmission line would be completed in the same time frame allocated for the proposed subtransmission line. The Applicant estimates that equipment installation at the Valley and Ivyglen stations will take ten and three days, respectively.

The Applicant estimates that above ground cable construction and splicing would require four people and two trucks and would proceed at a pace of 3,000 feet of cable and two splices per day. Underground cable installation and splicing would also require a crew of four people and would proceed at a pace of 2,500 feet of cable and two splices per day. For the trenching portion of construction, the Applicant estimates that a crew of three can proceed at a pace of 300 feet per day. The personnel, equipment, and construction schedule for the telecommunication system improvements are listed in Table B.4-4

Table B.4-4 Valley-Ivyglen Telecommunication Construction Personnel and Equipment

Number of Personnel	Equipment[1]	Hrs/Day	Days/Week	Total Days
Equipment Construction				
2	2 Vans (Gasoline)	7	5	13
Underground Conduit Construction				
3	1 Flatbed Truck	1	5	5
	1 Backhoe	8	5	5
	1 Stake-bed Truck	2	5	5
	1 Crew Truck (Gasoline)	2	5	5
4	1 Bucket Truck	8	5	2
4	1 Reel Truck	8	5	2
Overhead Construction				
4	1 Bucket Truck	8	5	50
	1 Reel Truck	8	5	50

Source: SCE 2006
Note:
[1]fuel for equipment is diesel except where noted

B.4.3 Fogarty Substation Construction

Prevailing topography of the Fogarty Substation site slopes easterly and would be altered by grading. Grading of site enclosed by project perimeter walls would be undertaken to achieve a two percent slope gradient to the east.

Prior to final design, a geotechnical investigation would be conducted to ascertain soil type and resistivity (electrical conductivity). Soil excavation would be necessary to install foundations, trenches, and the perimeter wall. The actual quantity of fill to be imported to the site would be calculated as part of the final engineering and design. It is estimated that up to 50,000 cubic yards of imported fill would be required if the site is graded to a two percent slope. Following final site grading, a four-inch thick layer of untreated

crushed rock would be placed within the walled area of the substation site, except in designated driveways. The Applicant has yet to determine the origin of the fill material and the capacity of the trucks that would be used to transport the fill to the site. For the purpose of this EIR, it is assumed that the transportation of the 50,000 cubic yards of fill material will require approximately 2,500 separate trucks (50,000 cy ÷ 20cy for each truck = 2,500 total trucks).

Fogarty substation would be constructed on a vacant parcel of land encompassing a total of 6.6 acres. The specific substation footprint would cover approximately 2.3 acres within this larger parcel. The remaining 4.3 acres would include: (1) approximately 1.4 acres for easements and setbacks, (2) approximately 1.9 acres for driveways and future road ROWs, and (3) approximately 1.0 acre of undeveloped land.

A temporary chain-link fence will be erected around the perimeter of the site. Construction of the foundations and below-ground facilities (e.g., ground-grid, conduit, and other infrastructure) would be completed, followed by installation of the above-ground structures and the electrical equipment and construction of the perimeter wall. Equipment laydown areas for substation construction would be within the substation footprint.

B.4.3.1 Fogarty Substation Overhead Subtransmission Line Construction

The positioning of the equipment for installing the overhead conductor segments from the existing Valley-Elsinore-Ivyglen 115 kV Subtransmission Line to the switchrack would be determined during construction. Equipment necessary for pole and conductor installations includes a heavy line truck, bucket truck, prefabrication truck, conductor pulling machines, and cable dollies. Equipment necessary for conductor pulling includes conductor-feeding equipment, conductor pulling equipment, crane, line truck, bucket truck, prefabrication truck, and related equipment.

B.4.3.2 Fogarty Substation Construction Schedule

Construction duration for the new Fogarty Substation, subtransmission lines tie-in, and telecommunication upgrades is estimated to be 14 months of construction over an 18 month period. This 18-month timeframe covers the winter period when site conditions, due to rain, may not allow conducting work. Substation construction would occur Monday through Friday. Construction will begin following CPUC approval of Applicant plans, anticipated in early 2009.

Construction duration for the subtransmission line tie-in and telecommunication upgrades at Fogarty Substation would occur between the hours of 7:00 a.m. to 7:00 p.m. on Monday through Saturday. The Fogarty Substation property would be used as a staging area for equipment and materials for both Applicant and contract crews. The personnel, equipment, and construction schedule for Fogarty Substation are listed in Table B.4-5.

Table B.4-5 Fogarty Substation Personnel and Equipment Summary

Construction Activity	Duration	Number of Personnel	Equipment[1]	Estimated Usage (Hours per Day)
Site Management	All	2	Office Trailer	8
Grading	20 days	10 Total	1 Water Truck (Gasoline)	8
			1 Truck for Soil Test Inspector (Gasoline)	8
			1- 980 Loader (Diesel)	8
			1 Scraper (Diesel)	8
			1 Roller Compactor	(for 10 days)

Table B.4-5 Fogarty Substation Personnel and Equipment Summary

Construction Activity	Duration	Number of Personnel	Equipment[1]	Estimated Usage (Hours per Day)
			(Diesel)	
Survey	10 days	2	2 Survey Trucks (Gasoline)	8
Civil (foundations, underground conduit, ground grid, etc.)	60 days	10	2 Crew Trucks (Gasoline/Diesel)	2
			2 Dump Trucks	2-4
			5 Ton Stake Bed Truck	2
			1 Portable Trencher	8 (for 30 days)
			1 Drill Rig	8 (for 10 days)
			Tractor/Skip Loader	6-8
			Forklift	4
Electrical (MEER, switchracks, conductor, circuit breakers, etc.)	60 days	15	2 (1 Ton) Stake Trucks	4
			2 Crew Cab Trucks (Gasoline/Diesel)	6
			2 Caryall Vehicles (Gasoline)	6
			1 Boom/Crain Truck	4
			1 Tool Trailer	8
			1 Forklift	6
			2 Manlifts	8
Transformer Setup	14 days Per Unit	5	1 Carryall Vehicle (Gasoline)	2
			1 Crew Truck (Gasoline/Diesel)	2
			Crane	6
			Forklift	6
			Processing Trailer (Electric) and Trailer Generator 100kw	24 hours
			Low Bed Truck	4
Test (relays, energization, etc.)	80 days	2	Test Truck (Gasoline/Diesel)	4
Paving Contractor	5 days	8	Foreman Truck (Gasoline/Diesel)	4
			2 Dump Trucks (Gasoline/Diesel)	6
			2 Skip Loaders	6
			1 Barbergreen	8 (for 2 days)
Fence Contractor	7 days	4	1 Foreman Truck (Gasoline/Diesel)	4
			1 Crew Cab (Gasoline/Diesel)	4
			1 Bobcat (Gasoline)	8
			1, 3-Ton Flatbed Truck	2 (for 2 days)

Source: SCE 2006

Note:

[1] Fuel for equipment is assumed to be diesel except where noted

Disassembly of Dryden Substation

Dryden Substation would be disassembled and removed once the new Fogarty Substation is completed and fully operational. It would take approximately five days to remove the majority of the substation. The following tasks would be required: de-energize the electrical banks; drain the banks of oil; disassemble the chain-link fence; test the banks; remove the banks by crane onto flatbed trucks; and demolish and remove the ground grid and concrete pad with a jackhammer, backhoe, and dump truck. A water truck would be used to help control dust. An additional three to four days would be required to remove the electrical poles, conductors, and other materials.

B.4.4 Valley and Ivyglen Substation Improvements Construction

Construction activities would be similar at both Valley and Ivyglen Substations. Substation construction activities would begin by mobilizing the civil or below grade construction crews on-site. The construction area would be cleared of existing 3/4-inch crushed rock, and the rock would be temporarily stockpiled on-site. Excavation and auguring would begin for the new equipment foundations. Excavation would be performed with a skip loader. Foundations would be placed with corresponding anchor bolts or steel imbed plates. Trench excavation would follow for the installation of conduit duct runs and equipment grounding systems. The previously cleared ¾-inch crushed rock would be placed back in the affected areas after the completion of below grade construction.

Electrical construction crews would move on-site following the final completion of all below grade structures. Electrical crews would begin by erecting structural steel, installing disconnect switches, voltage devices, surge arresters, circuit breakers, and installing primary conductors. Wiring crews would begin wiring the internal components of the circuit breaker and voltage devices. Wiring crews would install secondary cables at the switch-rack equipment and in the control room. The control room would house the protective relaying equipment. The new equipment would be tested to verify electrical integrity and proper operation throughout the construction process. Construction areas would be monitored by Applicant-provided security services outside of normal working hours on Monday through Friday and 24 hours a day on Saturdays and Sundays.

B.4.4.1 Valley and Ivyglen Substation Improvements Construction Schedule

The personnel, equipment, and construction schedule for the Valley and Ivyglen Substation Improvements are listed in Table B.4-6.

B.5 Operation and Maintenance

B.5.1 Proposed Subtransmission Line

The Applicant would control normal operations of the proposed subtransmission line remotely through internal systems. Annual inspections (at least one time each year) would be conducted by the Applicant by flying line routes or motor vehicle routes.

A regular maintenance schedule for the proposed subtransmission line would not be implemented; however, maintenance would be applied on an as-needed basis. Maintenance activities may include conductor repair, pole replacement, insulator replacement, access road maintenance, construction of spurs, and any other operations or maintenance activities deemed necessary.

Table B.4-6 Valley and Ivyglen Substation Improvements Construction Personnel and Equipment

Number of Personnel	Equipment[1]	Hrs/Day	Days/Week	Total Days
Civil Construction				
7	2 Crew Trucks (Gasoline)	2	5	10
	1 Dump Truck	1	5	10
	1 Concrete Truck	1	5	10
	1 Bobcat Skip Loader	6	5	10
	1 Drilling Rig/Auger	2	5	10
	1 Maintenance Truck (Gasoline)	2	5	10
Electrical Construction				
6	1 Fork Lift	6	5	10
	2 Crew Truck (Gasoline)	2	5	10
	1 Boom Truck	3	5	10
	1 Tool Trailer	3	5	10
	1 Maintenance Truck (Gasoline)	2	5	10
Substation Testing				
2	1 Test Truck (Gasoline)	3	5	15

Source: SCE 2006
Note:
[1]fuel for equipment is diesel except where noted

B.5.2 Telecommunications System

The telecommunications system would require periodic, routine maintenance, and emergency procedures maintenance for service continuity. Routine maintenance activities would include equipment monitoring, testing, and repair.

Additional personnel would not be required to conduct these regular activities. The Applicant's current staff numbers are sufficient for telecommunications operations and maintenance at the substations. Routine maintenance of the telecommunications components located at the substations would be conducted one time per year by one of the Applicant's employees.

B.5.3 Fogarty Substation

Routine maintenance would include equipment testing and equipment monitoring and repair, as well as emergency and routine procedures for service continuity and preventive maintenance.

The Applicant's personnel would make regular visits to Fogarty Substation by vehicle approximately two to three times per week to perform routine maintenance and for electrical switching.

B.5.4 Valley and Ivyglen Substations

Improvements to the Valley and Ivyglen Stations would not alter the current operation or maintenance activities at the sites. Operation and maintenance would continue as part of an ongoing, existing set of activities; additional personnel would not be required to conduct these regular activities.

B.6 Required Approvals

Table B.6-1 lists the potential federal, state, and local permits and authorization required for the Project. These agencies could use the EIR to inform them of the Project's potential impacts. Based on the Project's current design no formal consultations would be required regarding impacts on resources.

Table B.6-1 Potential Permit Requirements for Valley-Ivyglen Subtransmission Line and Fogarty Substation Project

Agency	Jurisdiction	Description of Permit
Local and Regional Agencies		
City	Grading	Grading Permit
City	Encroachment on ROWs	Encroachment permit (railroad, road crossings, etc.)
City	Building and Safety	Contractor to obtain a city business license as required.
City	Road Closure	Required per individual city standards. (cranes, deliveries, etc.)
City	Demolition	Demolition Permit
City	Excavation	Excavation Permit
City	Excavation	Shoring Permit
City	After Hours Work	After Hours Work Permit
County (various)	Grading	Grading Permit
County (various)	Flood Control Districts	Permits and easements for crossing County Flood Control District lands.
County	Encroachment on railroad, road crossings, etc.	Encroachment Permit
County	Excavation	Excavation Permit
State Agencies		
California Public Utilities Commission	Energy transmission upgrades	Permit to Construct (PTC)
California Water Resources Control Board	Stormwater discharges and Section 401 waste discharge requirements if a Section 404 of the Clean Water Act permit required	Notice of Intent to be covered by General Construction Permit for Stormwater Discharge and Section 401 Permit
California Department of Transportation	State highways	Encroachments on highway Right of Way
California Department of Fish and Game	Construction in streambeds	Streambed Alteration Permit
Federal Agencies		
U.S. Fish and Wildlife Service (USFWS)	Threatened or endangered species	Consultation with USFWS if the Project has the potential for effects on T&E species and/or their habitat
Department of Transportation – Federal Railroad Administration	Encroachment on right-of ways	Contact SCE Transportation Services for assistance.
U.S. Army Corps of Engineers	Work within "waters of the U.S." including dredging and fill of wetlands	Consultation with RWQCB, CDFG, USACE, USFWS, DOT, and Caltrans required for §404 permit.

Source: SCE 2006/E & E 2008

B.7 Cumulative Scenario

Southern California (Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties) is expected to grow by 6.26 million people from 2000 to 2030, resulting in the addition of 2.26 million households. Along with the increase in population, it is expected that a shift in employment opportunities from west to

east will result in increased growth in the eastern counties of Riverside and San Bernardino (SCAG 2004). This population shift will require the development of critical infrastructure such as road, pipelines, and transmission lines to facilitate growth in these counties. The eastward shift in employment has made Riverside County one of the fastest growing counties in the nation with a growth rate of 3.4% as opposed to the regional average of 1.25%. This increased growth rate will add 1.6 million people to Riverside County, requiring the number of households to double (SCAG 2004). The rapid growth of western Riverside County has resulted in multiple projects across residential, commercial, and industrial sectors.

As required by CEQA (Section 15130 et seq. of the CEQA Guidelines), this DEIR includes an analysis of cumulative impacts. A cumulative scenario has been developed to identify projects that are reasonably foreseeable and that would be constructed or operated during the life of the Project. The projects in the cumulative scenario include a range of project types from small single-family housing developments and infrastructure improvements to large commercial developments. To characterize the scope and nature of development in Riverside County, this scenario incorporates lists of planned projects within the vicinity of the Project, descriptions of demonstrative large-scale projects in the area, and references to land use policies that regulate (and encourage) development within Riverside County.

Table B.7-1 lists some of the projects comprising the cumulative scenario. The table lists primarily residential development projects within Riverside County, the City of Lake Elsinore, and the City of Perris, including but not limited to single family homes, residential lots, condominium complexes, and mixed use developments. Additionally, large-scale residential development is typically accompanied by infrastructure improvements as well as commercial and industrial developments, so the table lists a number of utility projects proposed by the Applicant. This table does not include all projects that could potentially contribute to cumulative impacts along with the Project; rather, it includes a number of concurrent projects in the area to demonstrate the scope and nature of development in Riverside County.

Table B.7-1 Projects representative of residential and other growth in the vicinity of the Project

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
County of Riverside						
Residential						
Bisected by subtransmission line route	TR 22519	Tract Map	N/A	N/A	N/A	N/A
Bisected by subtransmission line route	TR 32022	Tract Map	N/A	127.4 acres	265 lot subdivision	N/A
Within 0.5 mile of subtransmission line route	N/A	Tract Map	N/A	3702.4 acres	38 tracts filed in the County within 0.5 mile of the Proposed Subtransmission Line Route, totaling 7,370 new residential units including two projects detailed above	N/A
City of Lake Elsinore						
Residential						
N/A	2004-13 CRS 779	Design Review	Within the Alberhill Ranch Specific	N/A	52 single family detached dwelling units and a model home	Application Received 7/29/2004

Table B.7-1 Projects representative of residential and other growth in the vicinity of the Project

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
			Plan Area		complex	
N/A	2005-17 CRS 995	Design Review	Within the Alberhill Ranch Specific Plan Area, near Lake Street and Nichols Road.	N/A	127 single family homes including a model home complex	Application Received 8/18/2005 Planner: Kirt Coury
Within 0.5 mile of Fogarty Substation location		Alberhill Ranch Specific Plan, Phase One	Within the Alberhill Ranch Specific Plan Area	N/A	335,412 sq. ft. of commercial; 1,011 single family dwelling units; 550 multifamily dwelling units	Approved, under construction
Within 0.5 mile of Fogarty Substation location		Alberhill Ranch Specific Plan, Phase Two	Within the Alberhill Ranch Specific Plan Area	N/A	258 single family dwelling units	Approved, under construction
Within 0.5 mile of Fogarty Substation location		Lakeside Palms (TM 32768)		N/A	369 single family dwelling units	Approved
Within 0.5 mile of subtransmission line route	2 Projects	Design Review	Within the Ramsgate Special Plan.	163.8 acres	Currently under construction	Currently under construction
Other						
N/A	TTM 28214 CRS 444	Tentative Tract Map	Within the Alberhill Ranch Specific Plan	N/A	1042 lots for future residential and commercial	Application Received 5/8/2002 Planner: Kirt Coury
Adjacent to subtransmission line route	TPM 30739 CRS 560	Tentative Parcel Map	Off Nichols Road and east of I-15	200.55 acres	A division of 200.55 acres into 12 parcels.	Application Received 7/24/2003 Planner: Agustin Resendiz
Bisected by subtransmission line route	90-1 and 3	Specific Plan	Outlet Center Specific Plan	N/A	N/A	Approved 8/22/00
City of Perris						
Residential						
Adjacent to subtransmission line route	30662	Final Tract Map	Southwest corner of Goetz Road and Ethanac Road	287.23 acres	Detached single family homes, 452 residential lots, 0.26 acres for pump station, 156.76 acres open space/recreation, 17.78 acres for school	Tentative Tract Map 1/14/03 Applied for final Tract Map 1/14/03
Bisected by subtransmission line route	33973	Tentative Tract Map	South of Ethanac Road, bisected by the San Jacinto River	285.65 acres	Detached single family homes, 388 residential lots. Minimum 6,000 sq ft. Average 8,298 sq ft.,12 lettered lots for San	Applied for Tentative Tract Map 12/15/05

Table B.7-1 Projects representative of residential and other growth in the vicinity of the Project

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
					Jacinto River migration land, passive park facilities and open space	
Adjacent to subtransmission line route	33900	Tentative Tract Map	Southwest corner of Ethanac Road and River Road	116 acres	Detached single family homes, 200 residential lots, 7,200 sq ft minimum lot size	Applied for Tentative Tract Map January 2006
Within 0.5 mile of subtransmission line route	3 projects	Tract Maps	Along Ethanac Road	330.85 acres	Detached single family homes, 1,090 residential lots	2003-2005
Other						
Within 0.5 mile of subtransmission line route	2 projects		North of Ethanac Road at I-215	27.32 acres	650,000 sq ft retail and Office Space, 21 lots including 4 lots for condominium purposes, 387,993 sq ft mixed use, 10,843 sq ft retail, 202,618 sq ft warehouse/distribution, 170,268 multiuse and appurtenances	2005-2006
Proposed Projects by SCE						
DSP Projects						
N/A	N/A	Flagstaff 12 kV from Elsinore Substation	N/A	N/A	N/A	2007
0 mile	N/A	Ivyglen Substation	Located in unincorporated Riverside County, on the south side of Temescal Canyon Road between Maitri Road and I-15	N/A	Increase transformer capacity from 28 MVA to 56 MVA and add 2 12 – kV circuits	2008
0 mile	N/A	Valley Jr. Substation	N/A	N/A	Increase transformer capacity from 44.8 MVA to 72.8 MVA and add 3 12 kV circuits and 4.8 MVAR of 12 kV capacitors	2008
Subtransmission Line Projects						
0 mile	N/A	Valley-Auld-Pauba 115 kV Subtransmission Line	N/A	N/A	Reconductor the Valley-Auld 115 kV, Valley-Sun City 115 kV and Valley leg of the Valley-Auld-Pauba 115 kV line from 653 ACSR to 954 SAC	2008

Table B.7-1 focuses primarily on residential development in Riverside County; however, the cumulative scenario considers commercial and industrial growth as well as residential. In an effort to bolster employment opportunities to meet population growth, Riverside County's General Plan contains policies to promote the growth of commercial and industrial development within the County and encourage commercial and industrial relocation to the County. These include policies to promote the development of employment centers, create practical incentives for business development, and stimulate industrial and business clusters to foster a competitive marketplace. These and other policies facilitate commercial and industrial growth to ensure employment opportunities for the increased and increasing population in Riverside County.

A number of specific projects concurrent with the Project are located adjacent to or cross the proposed route. These projects are described individually below as they present a significant risk of contributing to cumulative impacts due to their proximity to the Project and simultaneous construction. Additionally, these projects help in presenting the cumulative scenario by demonstrating the scale and types of development in the County.

Toscana Marketplace. The proposed Toscana Marketplace and proposed Toscana Business Center would be located north of Indian Truck Trail Road on the east frontage of Highway 15 and Temescal Canyon Road, closest to subtransmission line segment W-10. The Toscana development projects would blend hotels, commercial space, restaurants, office buildings, research and development facilities, and light industrial facilities for a combined 1,000,000 square feet on the 65 acre parcel.

Lake Elsinore Advanced Pump Storage Project (LEAPS). The proposed LEAPS project would be located adjacent to the north side of Highway 15 near subtransmission line segments W-4 and W-10. The LEAPS project, which includes a 500 kV substation is not a Southern California Edison Project. The LEAPS project would not require any upgrades to the Project, though it could cause a slight subtransmission line route adjustment depending on the exact location of the "Lee Lake/Corona Lake" Substation as described in the LEAPS application submitted to the CPUC in October 2007 by the Nevada Hydro Company.

Pacific Clay Products, Inc. Pacific Clay owns and operates a 1,374 acre active mining site south of Highway 15. Additionally, Pacific Clay owns the following within the geographic scope of the Project:

- Castle & Cooke Alberhill Ranch, LLC
- Castle & Cooke Lake Elsinore West, Inc.
- Castle & Cooke California, Inc.
- Castle & Cooke Lake Elsinore Outlet Centers, Inc.
- Harbor Lounge, Inc.
- Castle & Cooke, Inc, and Castle & Cooke Commercial CA, Inc.

The cumulative impacts from all projects within western Riverside County must be considered together in order to determine their combined effect on environmental resources. This cumulative scenario demonstrates the rapid development in Riverside County across all sectors-residential, commercial, industrial, and mixed use. The scenario also shows the infrastructure developments and upgrades necessary to support the population growth and economic development.

A cumulative impact analysis is presented for each resource issue within Section D, Environmental Analysis. These analyses briefly discuss the impacts of combined development—recent, current, and planned—on each resource area. They define a geographic scope for the cumulative analysis specific to that resource and analyze the potentially significant impacts in conjunction with other projects within the

geographic scope that may similarly affect the resource area. The cumulative analyses at the end of each chapter in Section D refer to the cumulative scenario described above.