3: PROJECT DESCRIPTION

3.0 Introduction

The California Public Utilities Commission (CPUC) determined that the Valley-Ivyglen 115 kV Subtransmission Line Project (Application No. A. 07-01-031, filed January 16, 2007) and the Fogarty 115 kV Substation Project (Application No. A. 07-04-028, filed April 30, 2007) are consolidated into a single proceeding for California Environmental Quality Act (CEQA) analysis. Components of these two proposed projects are described in the following sections.

3.1 Project Overview

SCE proposes to construct, operate, and maintain a new 115 kV subtransmission line to connect the existing SCE Valley and Ivyglen Substations, and to construct a new Fogarty Substation to provide additional electrical services to the City of Lake Elsinore area (Proposed Project). The Proposed Project also includes constructing improvements at the Valley and Ivyglen Substations to accommodate the Proposed Subtransmission Line, tie-ins between the new Fogarty Substation and existing subtransmission and telecommunications lines, installation of a new telecommunications line between Valley and Ivyglen Substations, transfer of distribution facilities, and stockpiling and/or disposal of old electrical distribution line poles. The project consists of the four elements listed below:

- **Valley-Ivyglen 115 kV Subtransmission Line or Proposed Subtransmission Line**
  - Construction of a new 115 kV electrical subtransmission line, approximately 25 miles long, connecting the existing Valley and Ivyglen Substations
  - Transfer of existing distribution circuits along portions of the Proposed Subtransmission Line to new 115 kV poles

- **Valley and Ivyglen Substation Improvements**
  - Installation of new 115 kV switching and protective equipment to terminate the Proposed Subtransmission Line at the existing Valley and Ivyglen Substations

- **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

- **New 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

3.2 Proposed Project Location

The Proposed Project would be located in a rapidly developing area of southwestern Riverside County. The Proposed Project is described in terms of the Project Study Area, the two Electrical Needs Areas, the Proposed Valley-Ivyglen 115 kV Subtransmission Line Route, and the Proposed Fogarty 115/12 kV Substation Site, as defined below.

The **Project Study Area** is the Valley-Ivyglen Subtransmission Line southern corridor, an approximately 4,000 foot wide corridor along the Proposed Subtransmission Line Route and alternative routes. The Project Study Area is the area where the subtransmission line element is located. The alternative route segments and alternative Fogarty Substation site locations evaluated are also located within the Project Study Area.

There are two **Electrical Needs Areas** that have been identified for the Proposed Project. The first, the Valley-Ivyglen Electrical Needs Area, is comprised of the southwestern area of Riverside County, the northern portion of the City of Lake Elsinore, and the community of Glen Ivy Hot Springs. This Electrical Needs Area is served by five Valley South System substations: Centex, Dryden, Glen Ivy, Elsinore, and Ivyglen. The second area, the Fogarty Electrical Needs Area, is located wholly within the boundaries of the Valley-Ivyglen Electrical Needs Area. The Fogarty Electrical Needs Area is comprised of the urbanized areas of the City

of Lake Elsinore and adjacent areas of the southwestern portion of Riverside County. This Electrical Needs Area is currently served by Centex, Dryden, and Elsinore Substations. These two Electrical Needs Areas would benefit from the Proposed Project.

The **Proposed Valley-Ivyglen 115 kV Subtransmission Line Route** is the approximately 25 mile long route for the Proposed Subtransmission Line connecting the Valley and Ivyglen Substations located within the Project Study Area.

The **Proposed Fogarty 115/12 kV Substation Site** is located in the northern portion of the City of Lake Elsinore. The approximately 6.6-acre site is located east of Terra Cotta Road, west of future Dolbeer Street, south of future Kings Highway and north of the future Hoff Avenue.

Figure 3.2-1 delineates the Project Study Area, two Electrical Needs Areas, the Proposed Valley-Ivyglen 115 kV Subtransmission Line Route, and the Proposed Fogarty 115/12 kV Substation Site.

Subtransmission Line

The Proposed Subtransmission Line and associated new telecommunications line would be constructed between SCE's existing Valley and Ivyglen Substations located in Riverside County (Figure 3.2-1).

Valley Substation

Valley Substation is located in unincorporated Riverside County, at the southwest corner of State Highway 74 East and Menifee Road (Figure 3.2-1). It is approximately 1.25 miles east of the City of Perris.

Ivyglen Substation

Ivyglen Substation is located in unincorporated Riverside County, on the south side of Temescal Canyon Road between Maitri Road and I-15 (Figure 3.2-1).

Fogarty Substation

The proposed Fogarty Substation and its associated subtransmission line and telecommunications line tie-ins would be located in the City of Lake Elsinore. They are approximately 600 feet southeast of the intersection of Terra Cotta Road and Coal Avenue. This proposed site is adjacent to the existing Valley-Elsinore-Ivyglen 115 kV Subtransmission Line (Figure 3.2-1).

The preferred site for the new Fogarty Substation is owned by SCE. It consists of approximately 6.6-acres of vacant land with an east-west oriented rectangular shape as measured from the center line of the right-of-way (ROW) of the adjacent streets. Within the 6.6-acre parcel is the substation footprint (area contained within the perimeter wall) that covers approximately 2.3 acres, 1.4 acres of easements and setbacks, and a 1.0-acre property segment extending east that would not be developed as part of the Proposed Project, and approximately 1.9 acres of future road ROWs surrounding the proposed substation site.

3.3 Proposed Project Description

3.3.1 SUBTRANSMISSION LINE

Proposed Subtransmission Line Route

The Proposed Subtransmission Line would be approximately 25 miles long, and would connect SCE's existing Valley and Ivyglen Substations (Figure 3.3-1). The Project Study Area 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, SCE 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 (Figures 2.4-1 through 2.4-7). Route segments comprising the Proposed Subtransmission Line are summarized below and shown on Figures 3.2-1 and 3.3-1 through 3.3-7.

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 3.3-3 and 3.3-4).

Segment C-1
Proceeds southwest along the northwest side of Highway 74, from the existing 500 kV transmission ROW to Conard Avenue (Figures 3.3-4 and 3.3-5).

Segment C-3
From Highway 74, travels northwest on Conard Avenue; north on Rostrata Avenue; west on Mermack Avenue; north on Stonehouse Road; west on a dirt road and an existing 12 kV line to El Toro Road (Figure 3.3-5).

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 3.3-5 and 3.3-6).

Segment C-6
Continues west near Nichols Road, crosses I-15, and then back onto Nichols Road for approximately 1 mile to an existing 33 kV line ROW (Figures 3.3-5 and 3.3-6).

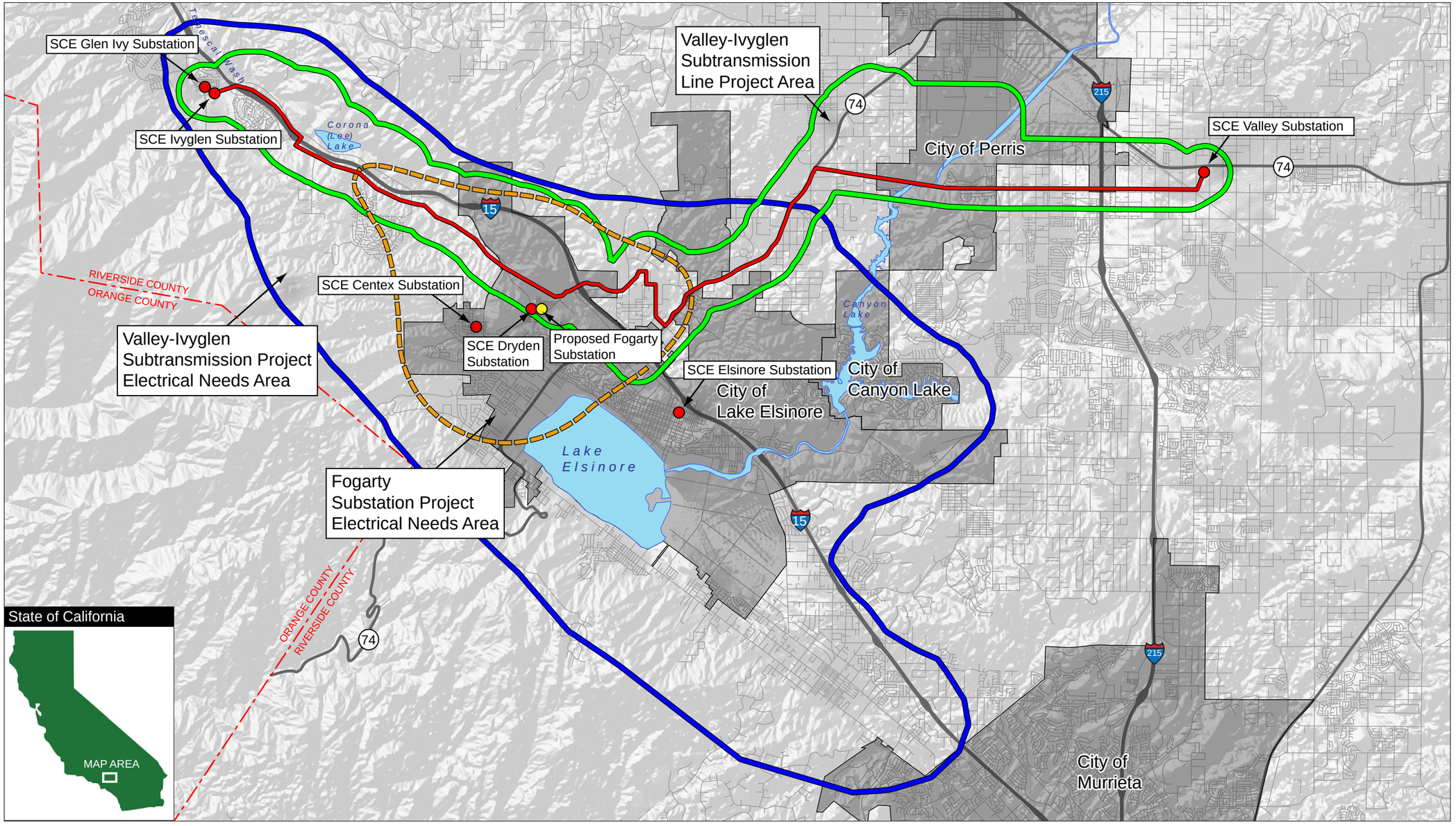
Segment W-1
Follows an existing 33 kV line ROW for approximately 4 miles from Nichols Road to Hostettler Road (Figure 3.3-6).

Segment W-4
From the intersection of Hostettler Road and Desperado Drive, follows the south side of I-15 northwest along an existing 33 kV line to an existing 12 kV line southeast of Indian Truck Trail (Figure 3.3-7).

Segment W-8
Crosses over I-15 a short distance southeast of Indian Truck Trail, near an existing 12 kV line crossing (Figure 3.3-7).

Segment W-10
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 (Figure 3.3-7).

Figure 3.2-1: Project Region and Study Area



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Valley-Ivyglen Subtransmission Line Project Electrical Needs Area Boundary
- Fogarty Substation Project Electrical Needs Area Boundary
- Proposed New 115 kV Line Route
- Valley-Ivyglen Subtransmission Line Project Area Boundary
- Existing Substation
- Proposed New Substation Site
- Interstate Highway
- State Route
- Road
- County Boundary
- Water
- City Area

0 1.25 2.5 5 Miles

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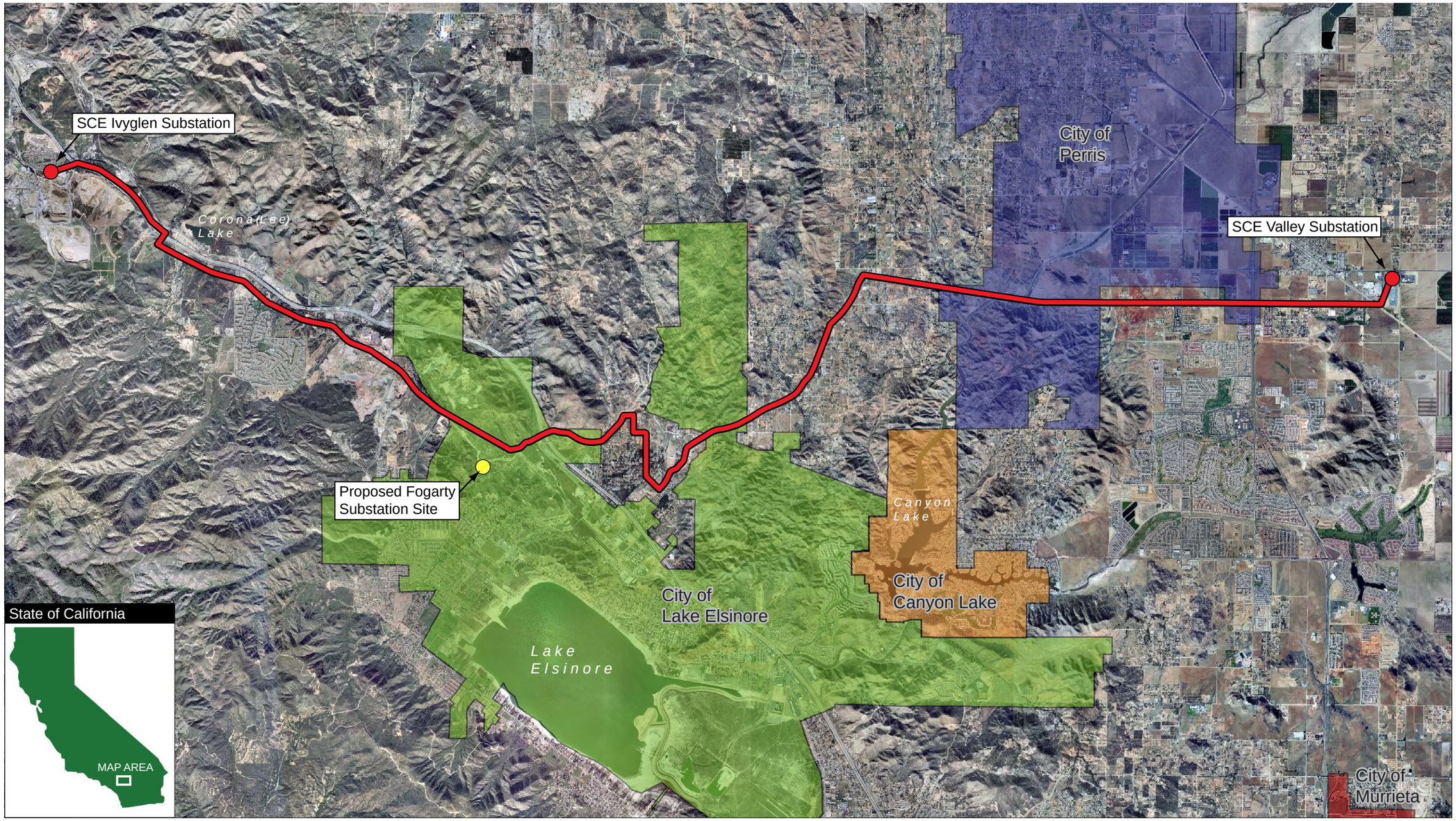
Figure 3.3-1: Proposed Subtransmission Project Route



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

Proposed Route
Existing Substation
Proposed New Substation Site
City of Canyon Lake
City of Lake Elsinore
City of Perris
City of Murrieta

N W E S

0 0.5 1 2 3 4 Miles

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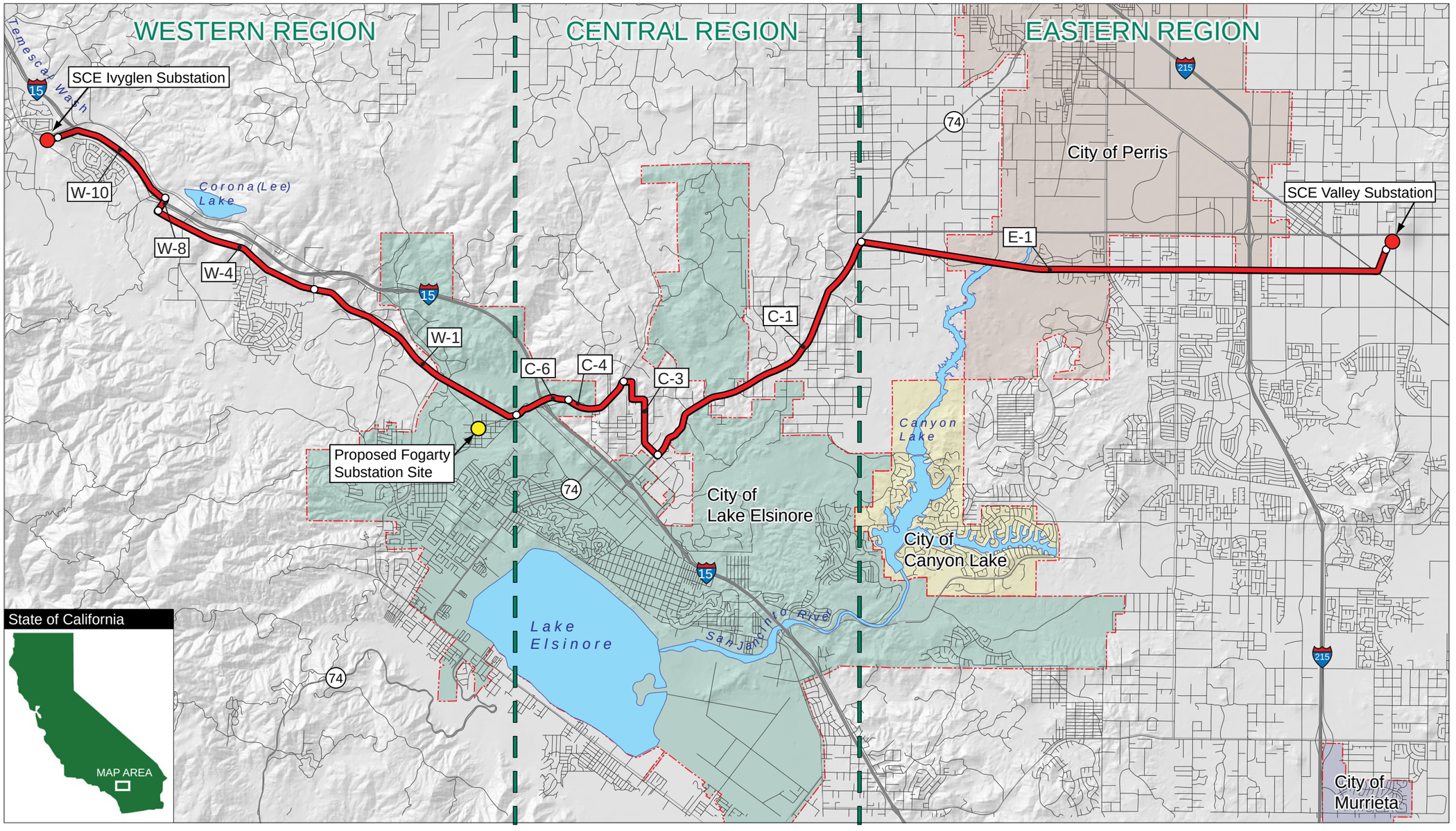
Figure 3.3-2: Proposed Subtransmission Route Segments



SOURCE: Riverside County TLMA 1990, Southern California Edison 2006, and MHA Environmental Consulting 2007

LEGEND

- Proposed Route Segment
- Interstate Highway
- State Route
- Existing Substation
- Proposed New Substation Site
- Road
- City Boundary
- City of Lake Elsinore
- City of Murrieta
- City of Canyon Lake
- City of Perris
- Water

0 0.5 1 2 3 4 Miles

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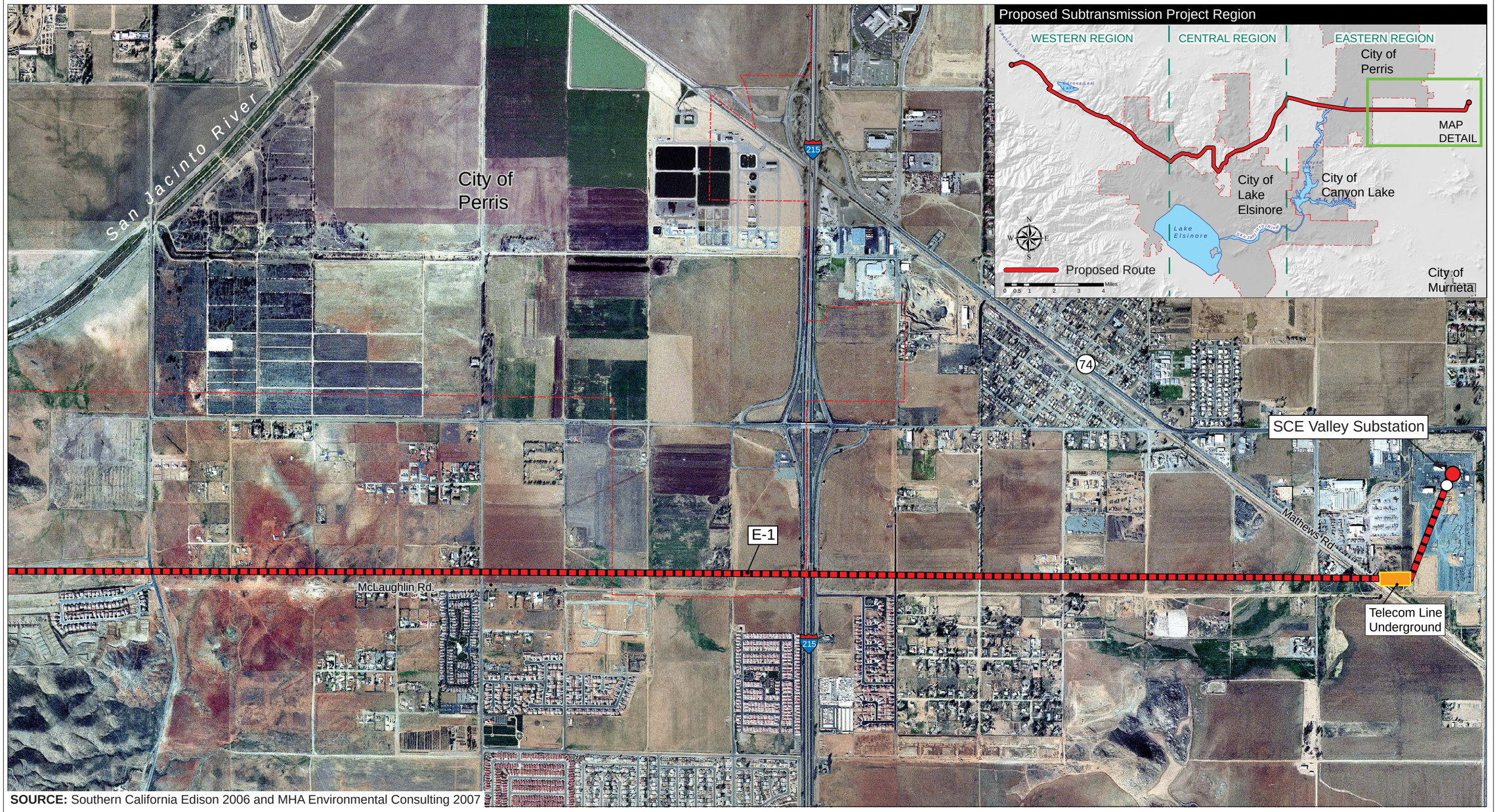
Figure 3.3-3: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed Route: Segment Built Along Existing Distribution Lines
- Proposed Route: Segment Built on New Infrastructure
- Proposed Route: Segment Built Along 500 kV ROW
- Interstate Highway
- State Route
- Existing Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

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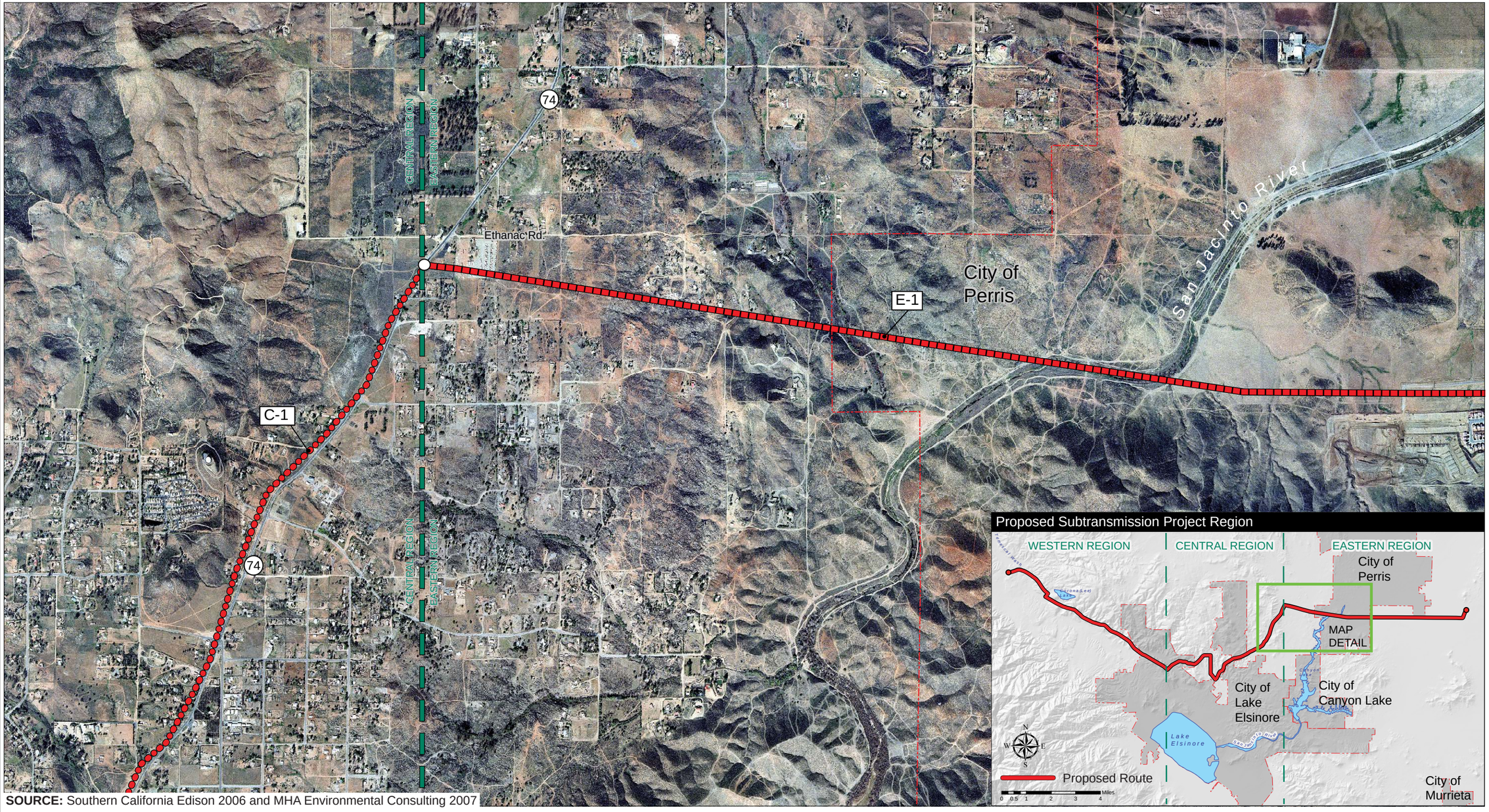
Figure 3.3-4: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed Route: Segment Built Along Existing Distribution Lines
- Proposed Route: Segment Built on New Infrastructure
- Proposed Route: Segment Built Along 500 kV ROW
- 15 Interstate Highway
- 74 State Route
- Existing Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

N W E S

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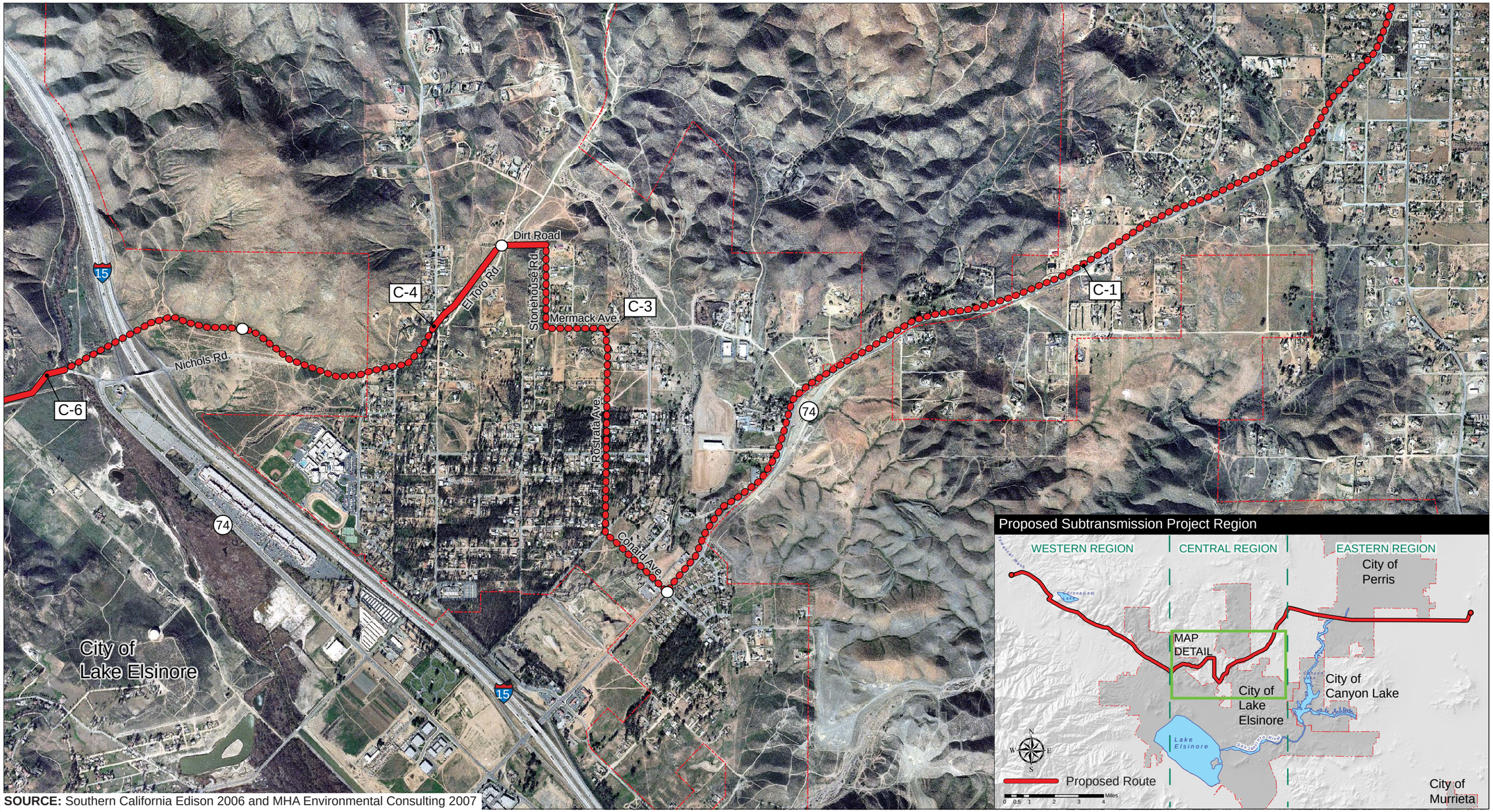
Figure 3.3-5: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed Route: Segment Built Along Existing Distribution Lines
- Proposed Route: Segment Built on New Infrastructure
- Proposed Route: Segment Built Along 500 kV ROW
- Interstate Highway
- State Route
- Existing Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

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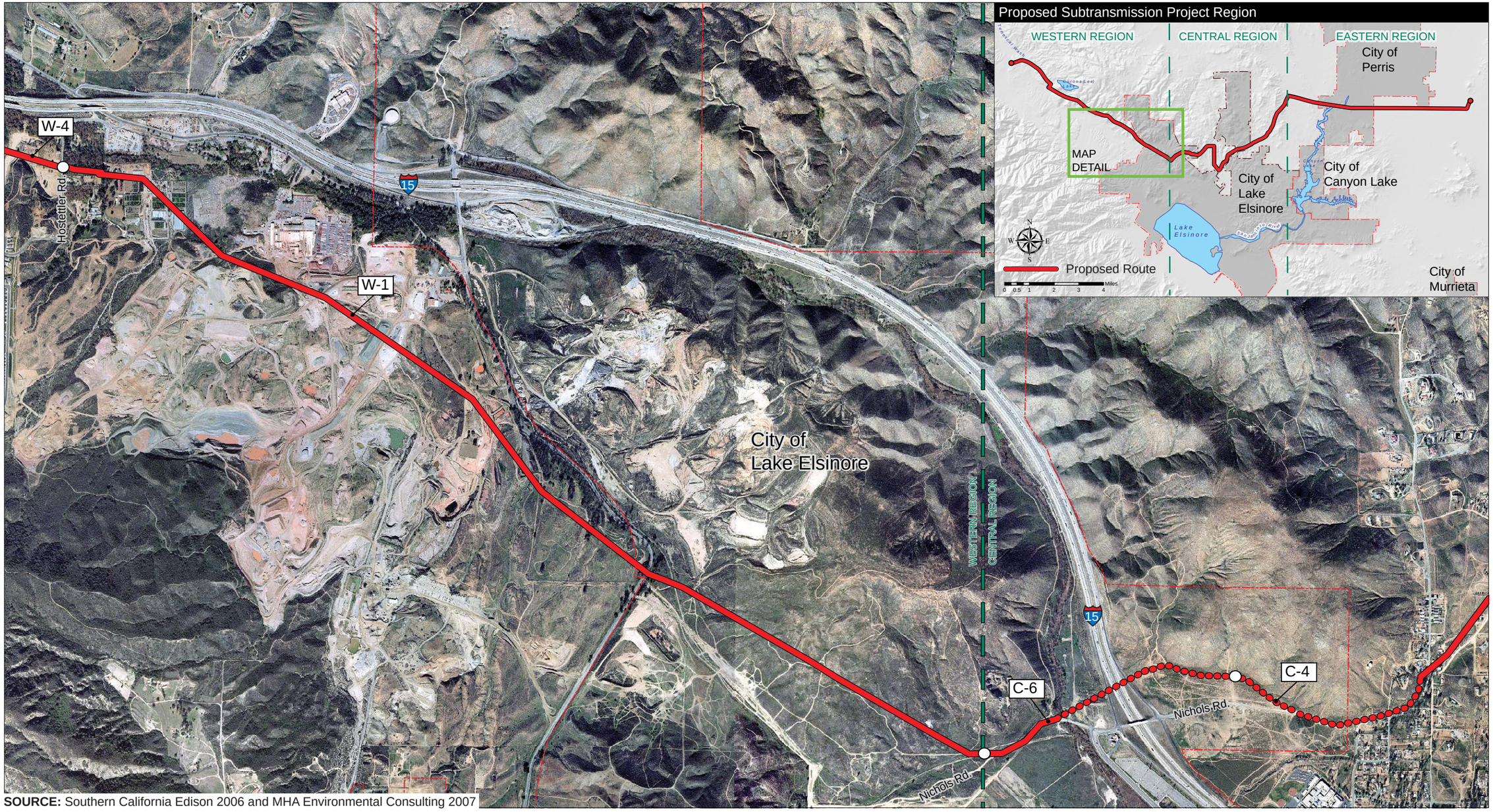
Figure 3.3-6: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed Route: Segment Built Along Existing Distribution Lines
- Proposed Route: Segment Built on New Infrastructure
- Proposed Route: Segment Built Along 500 kV ROW
- Interstate Highway
- State Route
- Existing Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

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Figure 3.3-7: Proposed Subtransmission Route Segments

SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed Route: Segment Built Along Existing Distribution Lines
- Proposed Route: Segment Built on New Infrastructure
- Proposed Route: Segment Built Along 500 kV ROW
- Interstate Highway
- State Route
- Existing Substation
- City Boundary

Miles: 0 0.1 0.2 0.4 0.6 0.8

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SCE recognizes that rapid development in the area may result in the relocation of some existing distribution lines. Where SCE's Proposed Subtransmission Line Route follows existing distribution lines, if those portions of the existing distribution line are relocated, the Proposed Subtransmission Line Route may be changed to follow the relocated distribution line. Approximately 16 miles of the Proposed Subtransmission Line would be constructed along SCE's existing ROW or along public streets.

In locations where the Proposed Subtransmission Line Route follows the existing distribution lines, these existing lines would be transferred to new poles installed for the Proposed Project. The previously used poles (which would no longer be needed) would then be removed. New poles would support the Proposed Subtransmission Line, as well as the existing 33 kV and/or 12 kV distribution lines.

Conditions along each route segment may dictate minor changes in segment length and pole placement pending completion of final engineering and site analysis (to be completed if the CPUC approves the Proposed Project). Table 3.3-1 summarizes the estimated length of each line segment, and provides the estimated number and type of poles for each segment. The table also identifies where segments would include transferred 33 kV and/or 12 kV distribution lines.

Figures 3.3-1 through 3.3-7 present the Proposed Subtransmission Line Route on aerial images, with annotations for street names, place names, and other ground features in the Project Study Area.

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 3.3-8 and 3.3-9). 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 (Figures 3.3-8 and 3.3-10) 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

Conductors and Insulators

The Proposed Subtransmission Line would consist of three 954 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

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 utilized 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 would run along a portion of the Proposed Subtransmission Line Route, between pole sites originating from the main transport route. Where needed, spur roads would lead from access roads and dead-end at one or more pole sites. Each pole site would be provided with an access or spur road for construction as well as for operation and maintenance.

Pole sites located on land without existing access routes would require the construction of access or spur roads from the nearest existing roadway. The specific location of new access roads and spur roads would be determined after completion of final engineering, in combination with a detailed topographic survey of the Proposed Subtransmission Line Route. SCE estimates that approximately 16 miles of new, unpaved roads would need to be constructed for the Proposed Subtransmission Line.

Construction

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 existing SCE 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.

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 (material 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 inserted into the hole, concrete poured into the hole to level or above (up to 2 feet) the natural surface, 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.

Wire Pulling and Splicing

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 for the entire length of the Proposed Subtransmission Line.

Table 3.3-1: Proposed Valley-Ivyglen Subtransmission Line Segments

Segment	Figure No.	Approximate Length (in miles)	Approximate No. of Poles to be Removed	Approximate Total No. of New Poles	Approximate No. of Light Duty Steel Poles[1]	Approximate No. of Tubular Steel Poles[2]	New Access Road Construction (miles)	Comments
E-1	3.3-3 and 3.3-4	7.5	0	200	192	8	7.50	The segment would be sited north of an existing SCE 500 kV transmission line within existing ROW. It includes a new crossing over I-215. New access roads would be constructed within the existing SCE ROW.
C-1	3.3-4 and 3.3-5	4.7	0 to 25	125	120	5	0.00	The segment would be built in new ROW along existing State Route 74. No new access roads would be constructed.
C-3	3.3-5	1.6	30 to 35	40	35	5	0.50	A portion of this segment would be built along the alignment of an existing 12 kV distribution line. That circuit would be transferred to the Proposed Subtransmission Line poles.
C-4	3.3-5	1.2	25 to 30	33	29	4	0.20	A portion of this segment would be built along the alignment of an existing 12 kV distribution line. That circuit would be transferred to the Proposed Subtransmission Line poles.
C-6	3.3-5 and 3.3-6	1.1	5 to 10	29	23	6	0.50	A portion of the segment would be built along new ROW on the north side of Nichols Road. The segment would also include a new crossing over I-15.
W-1	3.3-6	3.6	90 to 95	95	93	2	2.50	A portion of the segment would be built along the alignment of an existing 33 kV distribution line. That circuit would be transferred to the Proposed Subtransmission Line poles.
W-4	3.3-7	2.7	65 to 70	70	70	0	2.60	A portion of the segment would be built along the alignment of an existing 33 kV distribution line. That circuit would be transferred to the Proposed Subtransmission Line poles.
W-8	3.3-7	0.2	0 to 5	5	0	5	0.20	The segment includes a new crossing over I-15 near the location of an existing 12 kV distribution line crossing. The 12 kV distribution line would not be transferred to the Proposed Subtransmission Line poles.
W-10	3.3-7	2.4	0 to 5	63	53	10	2.00	Most of this segment would be built within new ROW, where a new access road would be constructed. A portion of the segment would be built along the alignment of an existing 115 kV subtransmission line from I-15 to the Ivyglen Substation.
Totals		**25.0**	**Between 215 and 275**	**660**	**615**	**45**	**16.00**	

NOTE:

[1] LDS pole heights as used in this table and throughout this PEA refer to the height of the pole that is "out of the ground." On average, for LDS poles, there is approximately 10 additional feet of pole length that is buried below the surface. Typically, pole height is 65 feet above ground surface, but may be higher to accommodate variations in topography.

[2] TSP heights as used in this table and throughout this PEA refer to the height of the pole that is "above the concrete footing." TSPs are installed atop concrete footings, which can add up to 2 feet of total overall height to the installation. Typically, pole height is 65 feet above ground surface, but may be higher to accommodate variations in topography and major highway crossings.

SOURCE: SCE 2006

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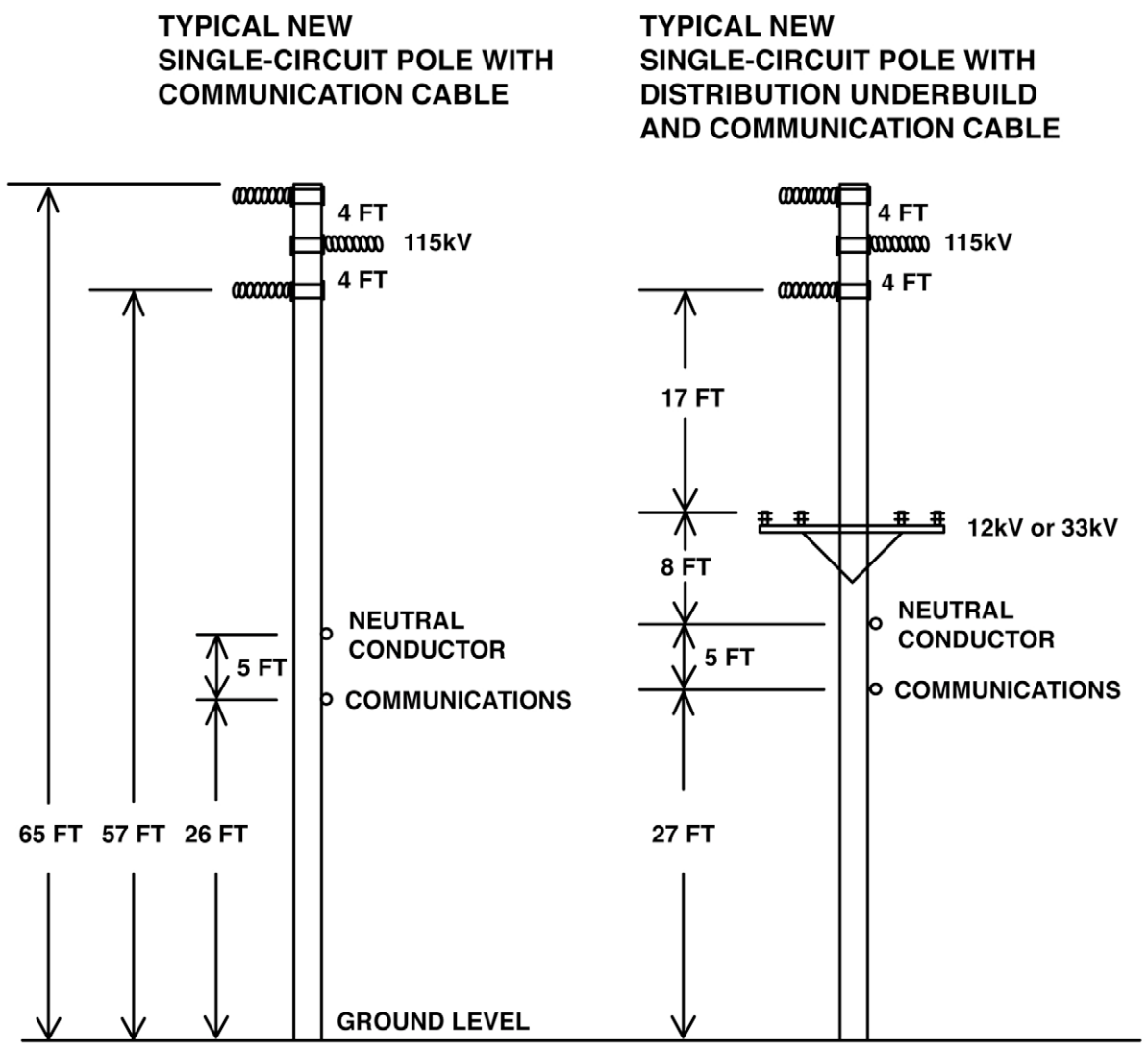
Figure 3.3-8: Typical New LDS Poles



SOURCE: SCE 2006

SCALE: Not to scale

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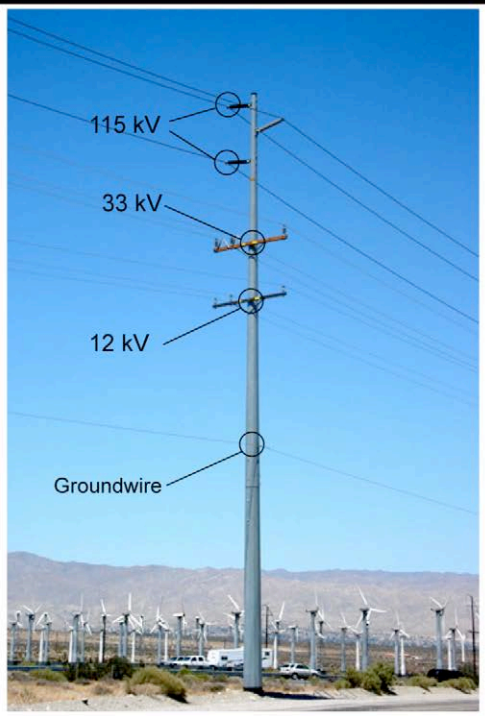
Figure 3.3-9: Typical LDS for 115 kV Subtransmission with Distribution Lines



SOURCE: SCE 2006 and MHA 2006

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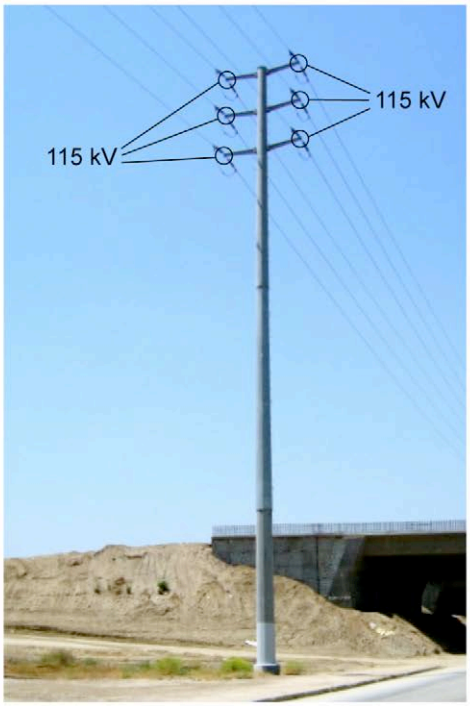
Figure 3.3-10: Typical TSP with Double 115 kV Subtransmission Lines



SOURCE: SCE 2006 and MHA 2006

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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. The location of pulling locations would be determined during construction.

Typically, wire pulls occur every 6,200 feet. Wire pulls are the length of any given continuous wire that is installed as part of a single process between two selected points along the line. Wire pulls are selected, where possible, based on the availability of dead-end structures at the ends of each pull, conductor reel capacity, terrain, and the suitability of stringing and splicing equipment locations.

Roads and Spurs

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 3.3-2 identifies the estimated number of personnel and equipment needed for construction of the roads and spurs for the Proposed Subtransmission Line. Typical earth-disturbing activities are summarized below.

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 minimum drivable width of 12 feet.

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 SCE'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.

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.

Distribution Line and Pole Removal

Portions of the Proposed Subtransmission Line would be constructed in line with existing SCE 33 kV and 12 kV distribution lines. These existing distribution lines would be transferred to new subtransmission line poles along segments where the Proposed Subtransmission Line Route follows existing distribution lines. The previously used poles (which would no longer be needed) would then be removed. The new poles would support the Proposed Subtransmission Line, as well as the existing 33 kV and/or 12 kV distribution lines.

After the distribution lines are transferred to the Proposed Subtransmission Line poles, all remaining distribution line conductor that could not be reused by SCE would be delivered to a facility for recycling. The wooden distribution poles would be completely removed (including that

Table 3.3-2: 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

NOTE:

[1] Fuel for equipment is diesel except where noted

SOURCE: SCE 2006

portion below the ground surface) 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 nearest SCE 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.

Operation, Inspection, and Maintenance

Normal operation of the Proposed Valley-Ivyglen Subtransmission Line would be controlled remotely through SCE control systems. SCE inspects subtransmission lines at least one time per year by driving and/or flying line routes.

Maintenance would occur as needed. Maintenance would include activities such as: repairing conductors, replacing insulators, replacing poles, and maintaining any access roads and spurs constructed by SCE.

Valley-Ivyglen Subtransmission Line Construction Schedule

Construction of the Proposed Subtransmission Line involves the following elements: surveying the subtransmission line route, engineering design based on these surveys, preconstruction environmental surveys, and construction of the Proposed Subtransmission Line. Some of these activities may overlap. SCE 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 12- to 18-month period.

SCE would anticipate starting construction activities in early 2008 following approval from the CPUC of SCE'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.

Preconstruction environmental surveys would be conducted after pole and road locations were surveyed and staked. Minor pole or road relocations would be made to avoid or minimize environmental impacts where possible. If sensitive areas could not be avoided, SCE would implement appropriate mitigation measures outlined in this PEA to reduce the significance of these impacts.

After the completion of final engineering 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 they would install the 115 kV conductors and ground wire.

The Proposed Subtransmission Line would be energized once the Proposed Project is constructed, including improvements at both the Valley and Ivyglen Substations and installation of telecommunication facilities.

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 3.3-3 identifies the estimated number of personnel and equipment needed for construction of the Proposed Subtransmission Line.

Table 3.3-3: Proposed Valley-Ivyglen Subtransmission 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 Mounted 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 Drilling Rig	10	6	24

NOTE:

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

SOURCE: SCE 2006

3.3.2 SUBSTATIONS

Substation Improvements

The Proposed Valley-Ivyglen Subtransmission Line would require the installation, operation, and maintenance of new equipment at the existing Valley and Ivyglen substations. The Proposed Project also includes construction of a new Fogarty Substation.

Valley Substation

Valley Substation is located in unincorporated Riverside County, at the southwest corner of State Highway 74 East and Menifee Road (Figure 3.2-1). It is approximately 1.25 miles east of the City

of Perris. Improvements to the Valley Substation would include installing the components listed below.

- 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
- Two 115 kV, 2000 Ampere (continuous), 40 kilo-Ampere (short circuit) rated circuit breakers on concrete foundations
- 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

These components would be located within the substation's existing fenced perimeter.

Ivyglen Substation

Ivyglen Substation is located in unincorporated Riverside County, near the community of Glen Ivy. It is on the south side of Temescal Canyon Road, between Maitri Road and I-15 (Figure 3.2-1). Improvements to the Ivyglen Substation would include installing the components listed below.

- 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

These components would be located within the substation's existing fenced perimeter.

New Fogarty Substation

The new Fogarty Substation would consist of electrical equipment needed to operate the substation, 12 kV underground distribution circuits exiting the substation, 115 kV overhead subtransmission lines entering the substation, a perimeter wall surrounding the substation equipment with a gate to provide access in and out of the substation, and an access driveway to the substation from a public road. The new substation would incorporate low-profile design features, which would limit the height of the electrical equipment to approximately 28 feet. The new Fogarty Substation and its proposed equipment are shown in Figure 3.3-11.

Fogarty Substation Equipment

The substation would be an unattended, automated, 56 megavolt-ampere (MVA), 115/12 kV low-profile substation containing a 115 kV switchrack, two 28 MVA 115/12 kV transformers, two 4.8-megavolt-ampere reactive (MVAR) 12 kV capacitor banks, and a 12 kV switchrack. 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 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 Mechanical-Electrical Equipment Room (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 new 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 SCE and industry standards. Grounding calculations would be based on soil resistivity measurements.

Electrical equipment housed within the proposed Fogarty Substation is summarized in Table 3.3-4.

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, and would be interconnected to the Fogarty Substation directly on-site by means of overhead lines supported by three new TSPs with concrete footings. To accomplish this tie-in, two new overhead 115 kV line segments, approximately 200 feet each, would be constructed within the Fogarty Substation. The tie-in would require installing three new TSPs within the substation parcel. 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. 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 (Figure 3.3-11).

Telecommunications System Improvements

Constructing the proposed telecommunications system improvements for the Proposed Fogarty Substation would require the installation of two 24-strand fiber optic cable segments between the Fogarty Substation and the existing fiber optic cable between Elsinore and Ivyglen Substations. This would result in one communication path between Fogarty and Elsinore Substations and a second communication path between Fogarty and Ivyglen Substations. The fiber optic cable installation from Fogarty Substation would be underground to two separate existing wood riser poles, one located to the west of the site and one to the east. Combined total length of the underground conduits for both fiber optic segments may be up to 1,200 feet long.

New telecommunications equipment would be installed at Fogarty Substation. An equipment rack installed in the Fogarty Substation 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.

Fogarty Substation Lighting

The new Fogarty 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

Table 3.3-4: Fogarty Substation Facility Equipment Summary

Equipment	Description
115 kV Switchrack	The proposed 115 kV low-profile steel switchrack would consist of six bays: two positions for lines, two positions for banks, one bus tie position, and a vacant position for a future 115 kV line. The two buses, operating and transfer, would each be 250 feet long and consist of 1590 thousand circular mils (kcmil) aluminum conductor steel reinforced (ACSR) conductor for each phase. Four of the switchrack positions would be equipped with a circuit breaker and three group-operated disconnect switches. The fifth position would be equipped with a circuit breaker and one group-operated disconnect switch. A control cable trench from the switchrack to the MEER would be installed. The switchrack dimensions would be approximately 28' H x 250' L x 94' W.
Transformers	Transformation would consist of two 28 MVA 115/12 kV transformers with isolating switch disconnects on high and low sides, surge arresters and neutral current transformers. The dimensions would be approximately 15' H x 80 L x 50 W. Two 115 kV low profile transformer bank racks would be constructed and equipped with one 28 MVA transformer each.
12 kV Switchrack	The 12 kV low-profile switchrack would consist of an 11 position rack expandable to 24 positions with wrap-around arrangement; 3-1/2 inch diameter extra heavy aluminum pipe to be utilized for the operating and transfer buses; a power cable trench; and a control cable trench to the MEER. The dimensions would be approximately 17' H x 99' L x 34' W.
Capacitor Banks	Two 12 kV, 4.8 MVAR capacitor banks would be installed. The dimensions would be approximately 17' H x 15.5' L x 13' W.
Mechanical-Electrical Equipment Room	A MEER would be constructed and contain control and relay panels, battery and battery charger, AC and DC distribution, HMI rack, communication equipment, telephone, and local alarm. Dimensions would be approximately 12' H x 36' L x 20' W. SCE typically purchases steel MEERs that have light tan/beige walls and roof, with a dark brown trim at the roofline, wall joints, and doorway. The MEER does not have eaves. Install a weather station to include temperature data that will provide information and collect weather data.

SOURCE: SCE 2006

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.

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 SCE safety standards.

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 8 foot high perimeter wall and would be consistent with community standards and subject to SCE's safety requirements. The metal access gate would be approximately 20 feet wide and a minimum of 8 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

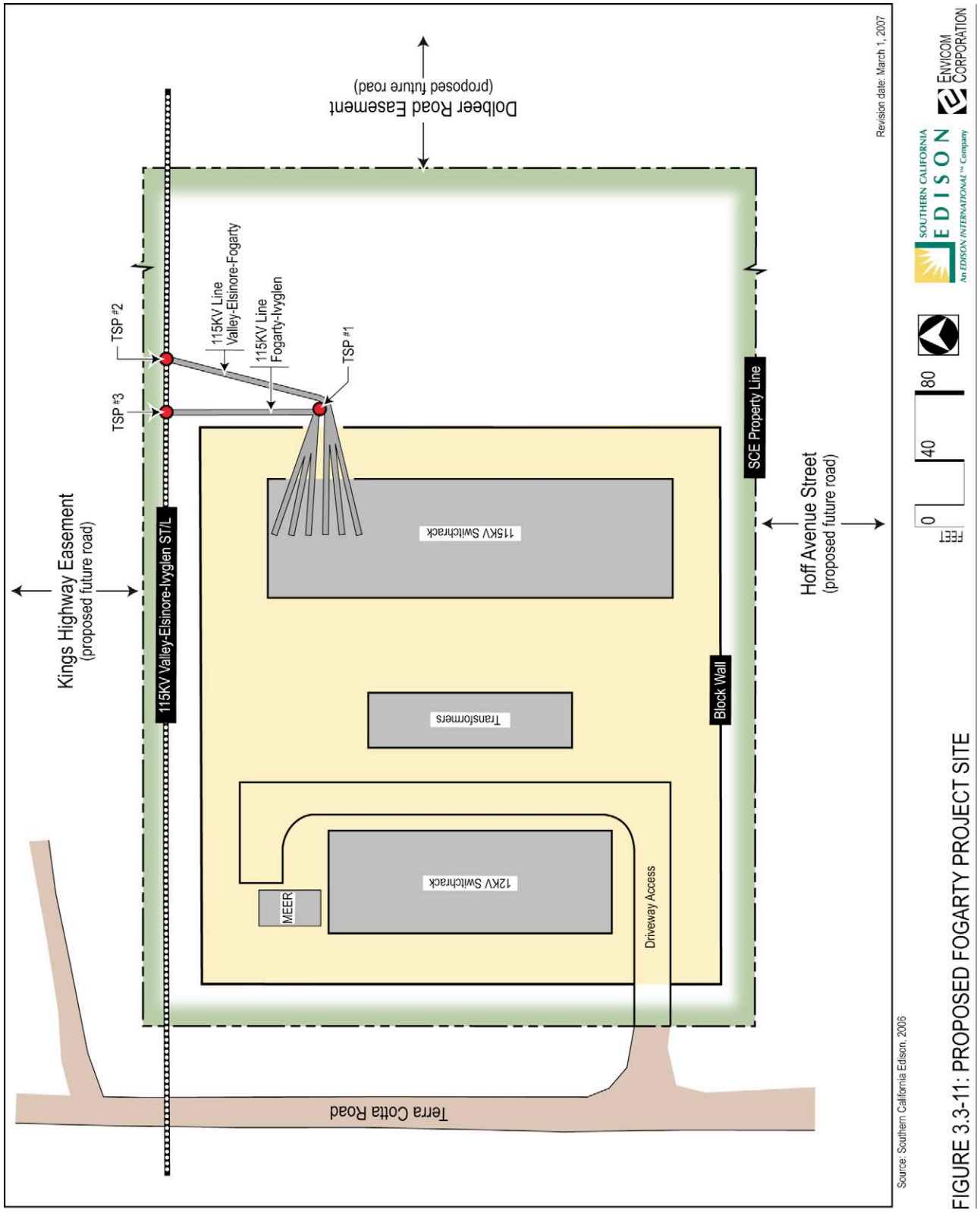


FIGURE 3.3-11: PROPOSED FOGARTY PROJECT SITE

inside the substation for increased security. The barbed wire would not be visible from outside the perimeter wall. SCE would conform to setback requirements in the area.

Fogarty Site Access

The substation would be accessed from the 90 foot wide ROW from Terra Cotta Road by a 20 foot wide asphalt/concrete paved driveway. The substation entrance would have a locked gate (20 foot double drive) capable of accommodating two-way traffic access to the substation.

Trucks would use public streets to access the Fogarty Substation. Substation construction may precede the completion of paving and/or roadway widening improvements to Terra Cotta Road. If so, SCE would construct an improved temporary driveway access at the front of the substation within the ROW of Terra Cotta Road. The parallel east-west streets (Figure 3.3-11) located within the adjacent 80 foot wide ROWs for future Kings Highway and future Hoff Avenue, along the northern and southern sides of the substation, may or may not be constructed.

Substation Construction

Valley and Ivyglen Substations

Construction activities would be similar at both the 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 3/4-inch crushed rock would be placed back in the affected areas after the completion of the 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 of the equipment throughout the construction process. Construction areas would be monitored by SCE-provided security services outside of normal working hours on Monday through Friday and 24 hours a day on Saturdays and Sundays.

Construction activities associated with substation improvements would be completed in the time frame allocated for construction of the Proposed Subtransmission Line. Estimated duration for substation construction is four months, overlapping with the final four months of the Proposed Subtransmission Line construction. Substation construction would occur Monday through Friday. No work would be conducted on weekends or holidays, unless necessary. Table 3.3-5 identifies the number of personnel and equipment needed for construction of the substation improvements.

Fogarty Substation

Prevailing topography of the preferred Fogarty Substation site slopes easterly and would be altered by grading. Grading of the 2.3-acre area enclosed by project perimeter walls would be undertaken to achieve a two percent slope gradient to the east.

Table 3.3-5: Proposed Valley and Ivyglen Substation Improvement 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 Trucks (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

NOTE:

[1] Fuel for equipment is diesel except where noted.

SOURCE: SCE 2006

Prior to final design, a geotechnical investigation would be conducted to ascertain soil type and resistivity. 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.

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.

Construction duration for the new Fogarty Substation, subtransmission lines tie-in, and telecommunication upgrades is estimated to be up to 12 months. The Proposed Project is expected to be operational by mid-2009 to ensure that safe and reliable electric service is available to meet customer electrical demands without overloading the existing electric facilities in the Fogarty Electrical Needs Area. Construction is scheduled to begin third quarter 2008.

The approximate construction equipment, personnel and scheduling for the substation construction is shown in Table 3.3-6.

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.

The personnel, equipment, and construction schedule for the installation of the overhead subtransmission line segments is provided in Table 3.3-7.

Work would occur between the hours of 7:00 am to 7:00 pm on Monday through Saturday. The Fogarty Substation property would be used as a lay down area for equipment and materials for SCE crews as well as contract crews.

Fogarty Substation Subtransmission Line Tie-In Construction Schedule

The construction of the subtransmission line tie-in would take place during the overall construction schedule of the new Fogarty Substation, a construction process that is estimated to last up to 12 months. The Fogarty Substation is expected to be operational by mid-2009 to ensure that safe and reliable electric service is available to meet customer electrical demands without overloading the existing electric facilities in the Fogarty Electrical Needs Area. Construction is scheduled to begin third quarter 2008.

Fogarty Substation Telecommunications System Improvement Construction

The underground telecommunication cable would be installed in new underground trenches at the proposed Fogarty Substation.

At the proposed Fogarty Substation, a backhoe would excavate an 18-inch wide trench, 36-inches deep, and approximately 1,200 feet long. A 5-inch PVC conduit would be placed in the trench and 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 telecommunication system improvements are listed in Table 3.3-8.

Fogarty Telecommunications Line Construction Schedule

Construction duration for the substation, subtransmission line tie-in, and telecommunications line upgrades is estimated to be up to 12 months. Fogarty Substation is expected to be operational by mid-2009 to ensure that safe and reliable electric service is available to meet customer electrical demands without overloading the existing electric facilities in the Fogarty Electrical Needs Area. Construction is scheduled to begin third quarter 2008.

Substation Operation and Maintenance

Valley and Ivyglen Substations

Operation and maintenance of the substation improvements at the Valley and Ivyglen Substations would be conducted as part of existing and ongoing operation and maintenance at the substations. No additional personnel would be required.

Fogarty Substation

The proposed Fogarty Substation would be unattended and the electrical equipment within the substation would be monitored and controlled remotely by a power management system from

Table 3.3-6: Fogarty Substation Construction Personnel and Equipment Summary

Construction Activity	Duration	Number of Personnel	Equipment[1]	Estimated Usage (Hours/Day)
Site Management	All	2	Office Trailer	8
Grading	20 days	10 Total	1 Water Trucks (Gasoline)	8
			1 Truck for Soil Test Inspector (Gasoline)	8
			1, 980 Loader (Diesel)	8
			1, Scraper (Diesel)	8
	10 days	10 Total	1, Roller Compactor (Diesel)	8
Survey	10 days	2	2 Survey Trucks (Gasoline)	8
Civil (foundations, underground conduit, ground grid, etc.)	60 days	10 Total	2 Crew Trucks (Gasoline/Diesel)	2
			2 Dump Trucks	2 - 4
			5-Ton Stake Bed Truck	2
			1, PortableTrencher	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 Truck	4
			2 Crew Cab Trucks (Gasoline/Diesel)	6
			2 Carryall 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

Table 3.3-6 *(Continued)*: Fogarty Substation Construction Personnel and Equipment Summary

Construction Activity	Duration	Number of Personnel	Equipment[1]	Estimated Usage (Hours/Day)
Paving Contractor	5 days	8	Foreman Truck (Gasoline/Diesel)	6
			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, Crewcab (Gasoline/Diesel)	4
			1, Bobcat (Gasoline)	8
			1, 3-Ton Flatbed Truck	2 (for 2 days)

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

SOURCE: SCE 2006

Table 3.3-7: Fogarty Overhead Subtransmission Line Construction Personnel and Equipment Summary

Construction Phase	Duration in Days	Number of Personnel	Equipment	Estimated Usage/Day (Hours)
Survey	1	3	1 Survey Truck (Gas or Diesel)	8
Footing Crew	4	8	1 Tractor/Trailer to haul Drill Rig (Diesel)	2
			1 Drill Rig (Diesel)	4-6
			4 Companion Vehicles (Gas/Diesel)	2
			1 Backhoe (Diesel)	4
			1 Water Truck (Diesel)	4
			1 Dirt Hauler (Diesel)	4
			3 Cement Trucks (Diesel)	1
Subtransmission Construction Crew	6	10	2 Companion Vehicles (Gasoline)	6
			1 Transmission Prefabrication Truck (Diesel)	2
			1 Transmission Line Truck (Diesel)	2
			2 Bucket Trucks (Diesel)	8
			1 Crane (Diesel)	8
			1 Wire dolly (Gas or Diesel)	4
			1 Wire Puller (Gas or Diesel)	4
			1 300-Ton Crane (Diesel)	4-6
			1 Crane Companion Vehicle Flat-Bed (Diesel)	4-6
			1 Flat-Bed Tractor/Trailer (Diesel)	2
Environmental	6	3	3 Companion Vehicles (Gas)	8

SOURCE: SCE 2006

Table 3.3-8: 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

NOTE:
[1] Fuel for equipment is diesel except where noted

SOURCE: SCE 2006

Valley Substation. Due to the remote operation of the substation, SCE personnel would generally visit for electrical switching and routine maintenance. Routine maintenance would include equipment testing and equipment monitoring and repair, as well as emergency and routine procedures for service continuity and preventive maintenance. SCE personnel would visit the substation approximately two to three times per week in one vehicle.

3.3.3 TELECOMMUNICATIONS SYSTEM

A telecommunication system is required for operating and monitoring of the Proposed Valley-Ivyglen Subtransmission Line, the Proposed Valley-Elsinore-Fogarty Subtransmission Line, and the Proposed Fogarty-Ivyglen Subtransmission Line. A telecommunication system is also required for operating and monitoring of the new Fogarty Substation.

The Proposed Project would require new telecommunications facilities and improvements to existing telecommunications facilities, and construction of an additional new communication path. The new communication path would connect the Valley Substation to the Ivyglen Substation, providing a second or redundant communication path between the two substations.

The Proposed Project includes modification of existing telecommunications facilities and construction of new telecommunications facilities. New fiber optic cable would be installed between the Valley Substation and Ivyglen Substation. New fiber optic cables to Fogarty Substation would be tapped into the cable between Elsinore and Ivyglen Substations. In addition, new telecommunications equipment would be installed within both Valley and Fogarty Substations to facilitate new interconnections. Telecommunications equipment modifications would be installed at Ivyglen and Elsinore Substations.

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 the Valley and Ivyglen Substations. Optical fiber cable would be attached to new poles along the new Valley-Ivyglen Subtransmission Line Route. This cable would typically be located 26 feet above ground level.

At two locations, the telecommunications line would be installed underground. Proposed underground segments of the telecommunications line are listed below and shown on Figures 3.3-3 and 3.3-7, and include:

- One telecommunications line segment exiting the 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 the Ivyglen Substation (Segment W-10)

A total of approximately 600 feet of underground fiber optic cable would be installed for the Valley-Ivyglen element of the Proposed Project. All new fiber optic cable for this project element would be installed in new underground conduits.

As part of the 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. The fiber optic cable installation from Fogarty Substation would be underground to two separate wood poles, with each of the two fiber optic cable connections having a length of approximately 1,200 feet.

A total of approximately 1,200 feet of underground fiber optic cable would be installed for the Fogarty Substation element of the Proposed Project. All new fiber optic cable would be installed in new underground conduits.

Telecommunications Construction

Substation Equipment Installation

At Valley Substation, a 19-inch wide rack would be installed in the existing communications room to hold the telecommunications equipment. Fiber optic communications equipment would be installed in this rack. The control room and communications room would have conduits for outside plant fiber optic cables and conduits to protective relaying equipment. No temporary construction area within the substation would be needed. SCE's telecommunications construction crews would be used for telecommunications equipment installation. Communications equipment installation would take approximately 10 days to complete.

At Ivyglen Substation, minor additions to existing channel equipment would be made. No temporary construction area within the substation would be needed. SCE's telecommunications construction crews would be used for telecommunications equipment installation. Communications equipment upgrade would take approximately three days to complete.

New telecommunications equipment would be installed at Fogarty Substation. An equipment rack installed in the Fogarty Substation 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 Ivyglen and Elsinore Substations to facilitate the new interconnections.

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. This would require the use of a utility vehicle with a bucket. 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. Four people and two trucks would be used. SCE anticipates that a crew of four people would install up to 3,000 feet of cable and two splices per day.

Underground cable would be installed in new underground conduits. 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. SCE anticipates that a crew of four people would install up to 2,500 feet of cable and two splices per day.

For this project, the trenching method would be used to install new underground conduits. 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. SCE anticipates that a crew of three people would install a 300-foot section of trench or one vault per day.

Two 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.

- Exiting the Valley Substation for approximately 300 feet from the substation fence to a riser pole (Segment E-1)

- Approximately 300 feet along Temescal Canyon Road into the Ivyglen Substation (Segment W-10)

The personnel, equipment and construction schedule for the Valley-Ivyglen underground telecommunication system are listed in Table 3.3-9.

At the proposed Fogarty Substation, a backhoe would excavate an 18-inch wide trench, 36 inches deep, and approximately 1,200 feet long. A 5-inch PVC conduit would be placed in the trench and 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 proposed underground segments of the telecommunications line requiring new construction 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

The personnel, equipment and construction schedule for the underground telecommunication system improvements are listed in Table 3.3-8.

Telecommunications System Operation and Maintenance

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

Table 3.3-9: Proposed 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
Overhead Construction				
4	1 Bucket Truck	8	5	50
	1 Reel Truck	8	5	50
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

NOTE:

[1] Fuel for equipment is diesel except where noted

SOURCE: SCE 2006

No additional SCE personnel, beyond normal staffing levels, would be required to operate or maintain the telecommunications system at the substations. Once per year, one individual would perform routine maintenance of the telecommunications components located at the substations.

Valley-Ivyglen Telecommunications Construction Schedule

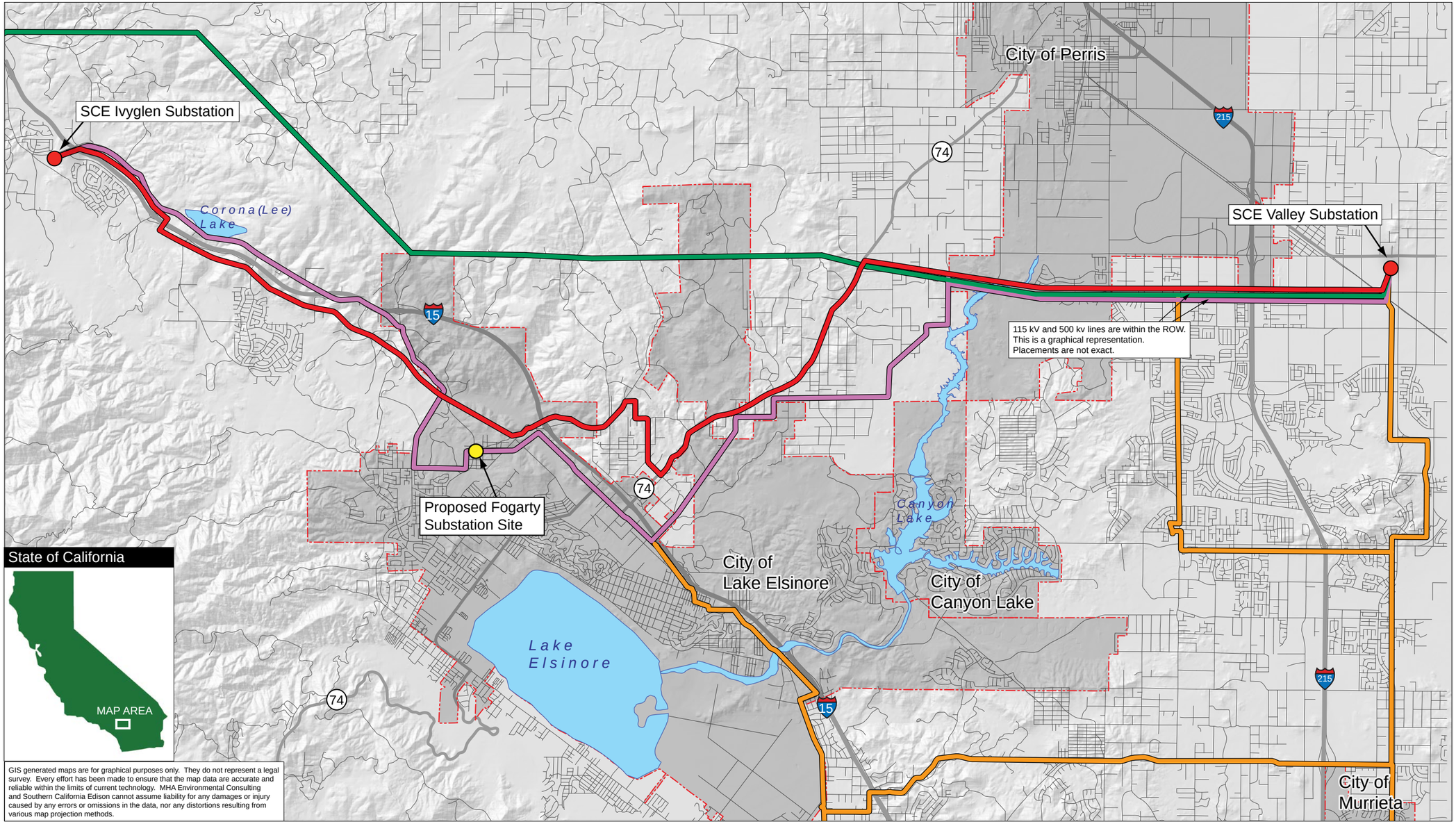
Telecommunications construction related to the Proposed Valley-Ivyglen Subtransmission Line would be completed in the same time frame allocated for the Proposed Subtransmission Line. The estimated duration for construction and installation of fiber optic communications equipment, overhead cable and underground elements is listed in Table 3.3-9.

Telecommunications construction related to the Proposed Fogarty Substation is discussed above under construction for the Fogarty Substation element.

3.4 Existing Transmission and Power Lines

The Proposed Project would be constructed in an area with existing SCE transmission and power lines. SCE lines in the Project Study Area include the Valley-Serrano 500 kV transmission line, as well as the Valley-Elsinore-Ivyglen, Elsinore-Skylark, Valley-Newcomb-Skylark, Valley-Newcomb, Valley-Auld, and Valley-Sun City 115 kV subtransmission lines. These lines are shown on Figure 3.4-1. Figure 3.4-2 indicates locations where existing SCE lines are within 300 feet of the Proposed Project or are crossed by the Proposed Subtransmission Line Route.

Figure 3.4-1: Transmission Lines and 115kV Subtransmission Lines Near the Project Study Area



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

- Proposed New 115 kV Line Route
- Existing 500 kV Transmission Line
- Existing 115 kV Subtransmission Line
- Existing Valley-Elsinore 115 kV Subtransmission Line
- Existing Substation
- Proposed New Substation Site
- Interstate Highway
- State Route
- Road
- City Boundary
- Urban Area
- Water

0 0.5 1 2 3 4 Miles

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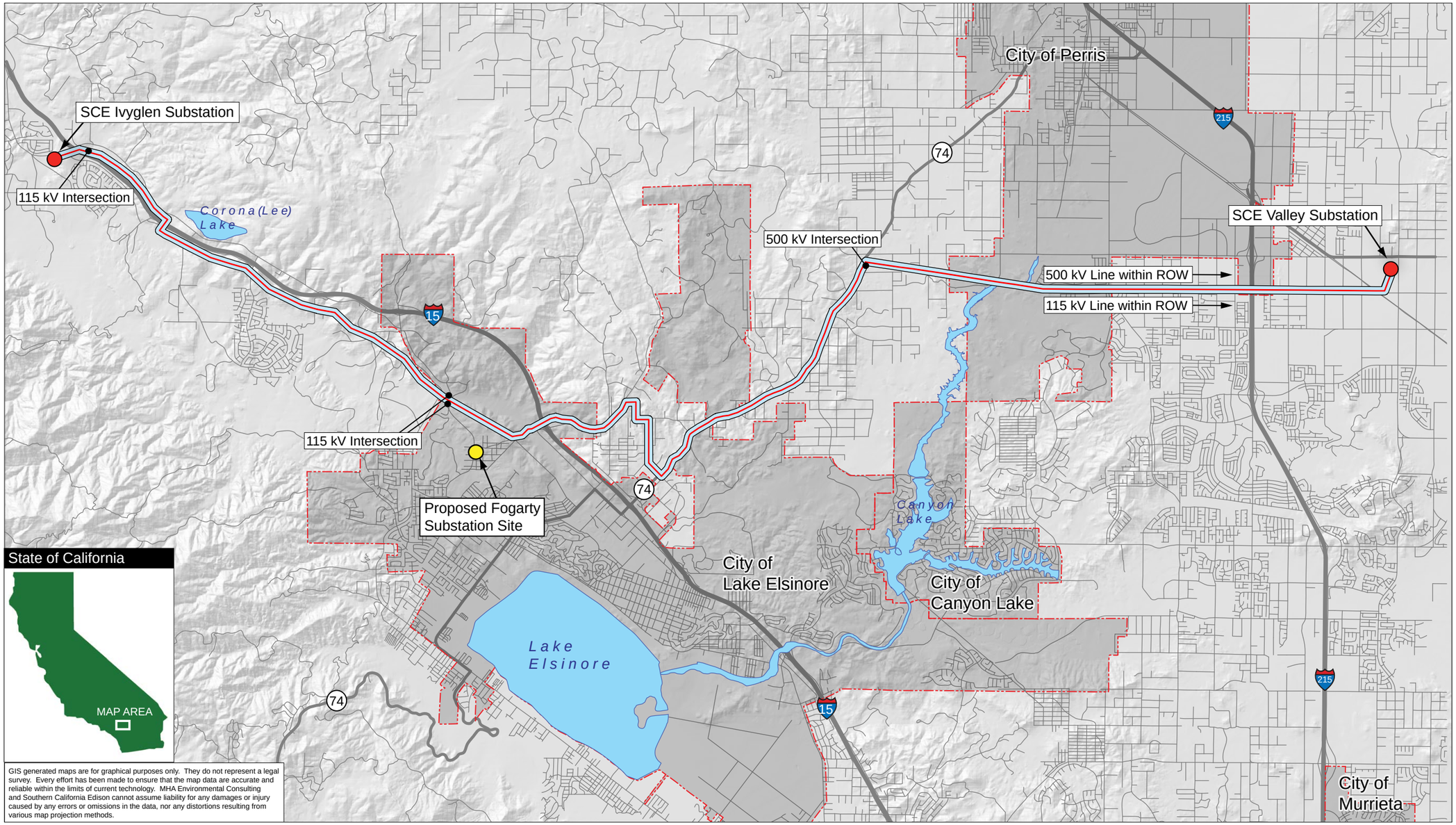
Figure 3.4-2: Transmission Lines and 115 kV Subtransmission Lines Along the Proposed Route



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting 2007

LEGEND

N W E S

Proposed Route with 300 Foot Buffer
Existing Substation
Proposed New Substation Site
Interstate Highway
State Route
Road
City Boundary
Urban Area
Water

0 0.5 1 2 3 4 Miles

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