BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338 -E) for a Permit to Construct Electrical Facilities With Voltages Between 50 kV and 200 kV: Valley-Ivyglen 115 kV Subtransmission Line Project	Application No. _________ (Filed January 16, 2007)

PROPONENT'S ENVIRONMENTAL ASSESSMENT
VALLEY-IVYGLEN 115 kV SUBTRANSMISSION LINE PROJECT

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ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ACSR	Aluminum conductor steel reinforced
ADT	Average daily traffic
AHM	Acutely hazardous material
amsl	Above mean sea level
APEFZA	Alquist-Priolo Earthquake Fault Zoning Act
AQMP	Air Quality Management Plan
AST	Aboveground storage tank
ASTM	American Society of Testing and Materials
BACM	Best available control measure
BEPA	Bald and Golden Eagle Protection Act
bgs	Below ground surface
BLM	Bureau of Land Management
BMPs	Best management practices
BNSF	Burlington Northern Santa Fe Railroad
°C	Degrees Celsius
CAA	Clean Air Act
CAAQS	California ambient air quality standards
Cal/OSHA	California Occupational Safety and Health Administration
CalTrans	California Department of Transportation
CARB	California Air Resources Board
CASQA	California Stormwater Quality Association
CBC	California Building Code
CCR	California Code of Regulations
CDF	California Department of Forestry and Fire Protection
CDFG	California Department of Fish and Game
CDOC	California Department of Conservation
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CGS	California Geological Survey (formerly the California Division of Mines and Geology)

CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community noise equivalent level
CNPS	California Native Plant Society
CO	Carbon monoxide
COC	Chemicals of concern
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSC	California Species of Concern
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plans
dB	Decibels
dBA	Decibels on the A-weighted scale
DO	Dissolved oxygen
DTSC	Department of Toxic Substances Control
EAC	Early action compact
EIR	Environmental Impact Report
EF	Emission factor
ERME	Environmental Resources Management Element
ESA	Endangered Species Act
°F	Degrees Fahrenheit
FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FBCC	Federal Birds of Conservation Concern
FE	Federal Endangered
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FT	Federal Threatened
GO	General Order
HANS	Habitat Evaluation and Acquisition Negotiation Strategy
HAPs	Hazardous Air Pollutants

HFRA	Healthy Forests Restoration Act
HMBP	Hazardous Material Business Plan
H_2S	Hydrogen sulfide
IEEE	Institute of Electrical and Electronics Engineers
kcmil	Thousand circular mils (electricity conductor)
kV	Kilovolt
Lb	Pound
L_{dn}	Day-night sound level
LDS	Light duty steel poles
L_{eq}	Equivalent steady sound level that provides an equal amount of acoustical energy as the time-varying sound
$L_{eq\ max}$	Highest noise level to occur during a period of time
LOS	Level of service
LST	Local significance thresholds
m^3	Cubic meters
MBTA	Migratory Bird Treaty Act
MCE	Maximum credible earthquake
$\mu g/m^3$	Micrograms per cubic meter
mg/l	Milligrams per liter
mg/m^3	Milligrams per cubic meter
MMCRP	Mitigation Monitoring, Compliance, and Reporting Program
MSHCP	Western Riverside County Multiple Species Habitat Conservation Plan
MRZ	Mineral Resource Zones
MVA	Megavolt ampere
MVAR	Megavolt ampere reactive
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	National Communities Conservation Plan
NERC	North American Energy Reliability Council
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System

NPL	National Priority List
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Properties
OES	Office of Emergency Services
OSHA	U.S. Occupational Safety and Health Administration
O_3	Ozone
Pb	Lead
PEA	Proponent's Environmental Assessment
PM	Particulate matter
$PM_{2.5}$	Particulate matter less than 2.5 microns
PM_{10}	Particulate matter less than 10 microns
ppm	Parts per million
PTC	Permit to construct
RCOFD	Riverside County Fire Department
RCIP	Riverside County Integrated Project
RCRA	Resource Conservation Recovery Act
ROG	Reactive organic gas
ROW	Right-of-Way
RTA	Riverside Transit Agency
RWQCB	Regional Water Quality Control Board
SAC	Stranded aluminum conductor
SAWPA	Santa Ana Watershed Project Authority
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Soil Conservation Service
SCE	Southern California Edison
SE	State Endangered
SIP	State Implementation Plans
SO_2	Sulfur dioxide
SO_4	Sulfates
SPCC	Spill Prevention Control and Countermeasure Plan
SR	State Route

ST	State Threatened
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic air contaminants
TPQ	Total planning quantities
TQ	Threshold quantity
TSP	Tubular steel poles
UAB	Urban area boundaries
ULSD	Ultra low-sulfur diesel
UBC	Uniform Building Code
UP	Union Pacific Railroad
USA	Underground Service Alert
USACOE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
US EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	Ultraviolet
VdB	Vibration decibels
VOC	Volatile Organic Compound
WECC	Western Energy Coordinating Council
WRCC	Western Regional Climate Center

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Executive Summary

ES: EXECUTIVE SUMMARY

ES.1 Introduction

ES.1.1 BACKGROUND

This Proponent's Environmental Assessment (PEA) evaluates the potential environmental impacts of Southern California Edison Company's (SCE) proposed Valley-Ivyglen 115 kV Subtransmission Line Project (Proposed Project), and its alternatives, located in southwestern Riverside County. This portion of Riverside County is one of the fastest growing areas in the United States, and electrical demand is growing as a result of new homes and businesses built in recent years.

ES.1.2 PROPOSED PROJECT

SCE proposes constructing the Proposed Project to serve current and projected demand for electricity and to maintain electric system reliability in the southwestern area of Riverside County, the northern portion of the City of Lake Elsinore, and the community of Glen Ivy Hot Springs (Electrical Needs Area), as shown on Figure ES.1-1. The Proposed Project is proposed to be operational by mid-2009 to ensure that safe and reliable electric service is available to meet existing and projected customer electrical demands. The Proposed Project includes the following components:

- A new 115 kV subtransmission line approximately 25 miles long that traverses between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation (Valley-Ivyglen 115 kV Subtransmission Line or Proposed Subtransmission Line)
- Improvements at SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation to accommodate the Proposed Subtransmission Line
- New fiber optic cable and communication equipment to provide a new path for SCE's telecommunication system along the new subtransmission line route

The Proposed Subtransmission Line would be located within a combination of existing rights-of-way (ROW), newly acquired ROW, and along public streets and highways as part of SCE's existing franchise in Riverside County and the City of Lake Elsinore. Construction is scheduled to begin in early 2008.

ES.2 Project Purpose, Need and Objectives

ES.2.1 PURPOSE AND NEED

The purpose of the Proposed Project is to build necessary electrical facilities to maintain safe and reliable service to customers, and to meet forecasted demand in the Electrical Needs Area (Figure ES-1). SCE's current forecast shows that the existing subtransmission facilities serving the Electrical Needs Area may exceed design operating limits as early as 2007. Under the Federal Energy Regulatory Commission (FERC), North American Electric Reliability Council (NERC), Western Electricity Coordinating Council (WECC), and California Public Utilities Commission (CPUC) rules, guidelines and regulations, electrical transmission systems must have sufficient capacity to maintain safe, reliable and adequate service to customers. System safety and reliability must be maintained under normal conditions, when all facilities are in service, as well as under abnormal conditions. Abnormal conditions result from equipment or line failures, maintenance outages or emergency outages that cannot be predicted or controlled.

The Proposed Project is needed to maintain safe and reliable electrical service to SCE's existing customers and to meet the forecasted demand for electricity in the Electrical Needs Area.

ES.2.2 PROJECT OBJECTIVES

The California Environmental Quality Act (CEQA) and the CEQA Guidelines (Section 15126.6(a)) require considering a range of reasonable alternatives to a proposed project, or to the location of a proposed project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. SCE defined the following objectives to meet the Proposed Project's purpose and need:

- Serve projected electrical demand requirements in the Electrical Needs Area beginning in 2009
- Provide a direct connection between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation
- Increase system reliability by locating a second 115 kV subtransmission line within the Electrical Needs Area
- Improve operational and maintenance flexibility on subtransmission lines without interruption of service
- Meet project need while minimizing environmental impacts
- Meet project need in a cost-effective manner

SCE considered these objectives in developing a reasonable range of alternatives to the Proposed Project and to the location of the project.

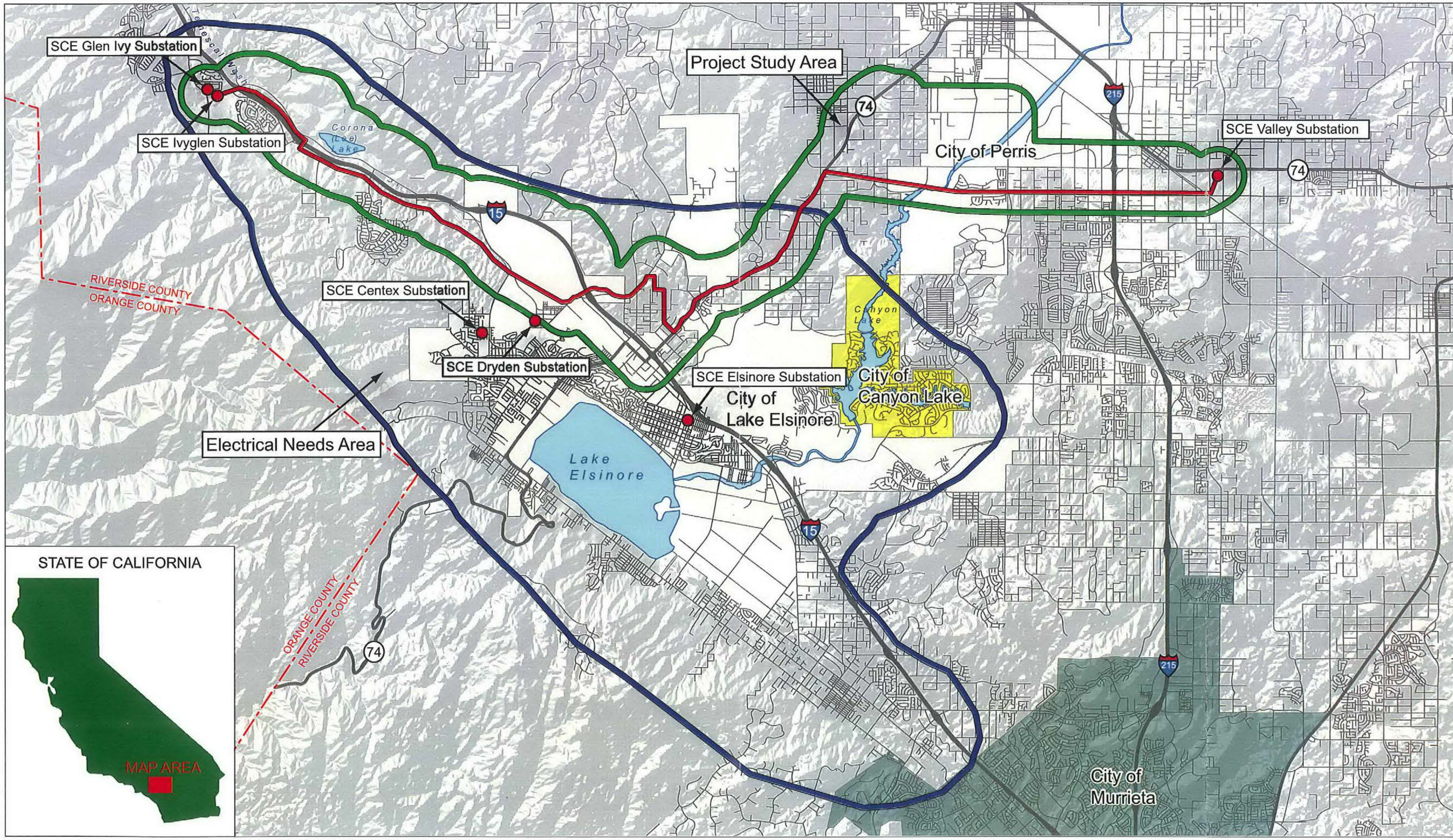
ES.3 Alternatives

ES.3.1 SYSTEM ALTERNATIVES

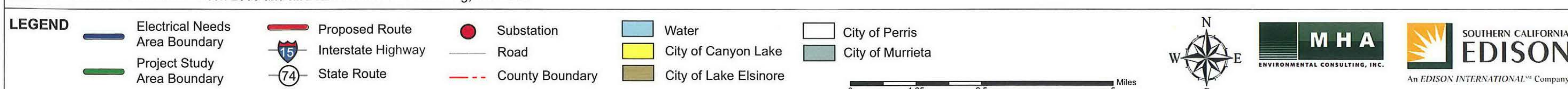
SCE considered three system alternatives and the No Project Alternative to meet the forecasted electrical demand within the Electrical Needs Area. These alternatives are listed below.

- **System Alternative 1:** Construct a new 115 kV subtransmission line that traverses between the Valley 500/115 kV and the Ivyglen 115/12 kV substations
- **System Alternative 2:** Upgrade the existing electrical subtransmission and distribution system

Figure ES.1-1: Project Region and Study Area



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006



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- **System Alternative 3:** Convert the Ivyglen Substation from a 115/12 kV substation to a 66/12 kV substation and transfer it to the Mira Loma 220/66 kV system
- **System Alternative 4:** No Project Alternative

SCE recommends System Alternative 1 as the preferred System Alternative. System Alternative 1 would require the fewest system modifications of the system alternatives considered. This alternative would also provide the most capacity of the three system alternatives considered to serve projected electrical demand requirements in the Electrical Needs Area and would provide a second 115 kV subtransmission line to the Ivyglen Substation. The second subtransmission line would allow SCE to perform maintenance by providing the ability to remove one line from service without interrupting service to customers. In addition, the second subtransmission line would enable SCE to serve the demand under emergency conditions. This system configuration enables operational flexibility to transfer load between Elsinore, Ivyglen, and Glen Ivy substations without interruption. The proposed increase in subtransmission capacity would in turn provide greater capacity to the Ivyglen 115/12 kV Substation to increase the distribution supply under both normal and abnormal conditions.

System Alternative 1 provides the potential for future system upgrades that would accommodate continuing area growth and electrical demand. System Alternative 1 also has the fewest environmental impacts of the three system alternatives evaluated.

ES.3.2 SUBTRANSMISSION CORRIDOR ALTERNATIVES

SCE considered several different routing alternatives for System Alternative 1. Each alternative began at the Valley Substation and ended at the Ivyglen Substation. The routing options were divided into three alternative corridors: northern, middle, and southern.

SCE recommends the southern corridor alternative as the preferred corridor alternative. The southern corridor alternative would have the least environmental impacts. In addition, the southern corridor alternative would provide an operational benefit by providing the ability to connect to potential future facilities in the Electrical Needs Area. Multiple alternative route segments within the southern corridor were considered as discussed below.

ES.3.3 ROUTE SEGMENT ALTERNATIVES

SCE considered several routing alternatives for the Valley-Ivyglen 115 kV Subtransmission Line Project. Each alternative segment is located within the southern corridor, defined as the Project Study Area. The Project Study Area begins at the Valley Substation and terminates at the Ivyglen Substation. Alternative routes were subdivided into individual segments to facilitate project analysis. Twenty-one alternative route segments were identified within the Project Study Area and evaluated for this project.

SCE divided the Project Study Area into three regions: Eastern (City of Perris area), Central (City of Lake Elsinore area) and Western (Glen Ivy/Corona Lake area). This segmentation enhanced the comparison of alternatives by grouping alternative route segments into regions with similar settings (and potential impacts).

SCE examined a total of 15 segments (six of the original 21 segments were eliminated from further consideration) for their potential environmental effects. Nine discreet alternative route segments, totaling approximately 25 miles, comprise the Proposed Route for the new Valley-Ivyglen 115 kV Subtransmission Line.

ES.4 Environmental Overview

Potential environmental impacts associated with construction and operation of the Proposed Project are analyzed in Chapter 4 of this PEA using site specific information and field surveys. In the evaluation of each resource category and issue, the environmental setting is described, followed by a discussion of the regulatory framework, the identification of significance criteria or thresholds, and a description of potential environmental impacts and proposed mitigation, as needed. The impacts of each option and alternative are then described. A comparison of the impacts of each alternative is provided in Table 5.2-1, Summary of Impacts and Significance. The shaded columns represent the segments comprising the Proposed Route.

The Proposed Project would have less than significant or no impact with mitigation on all resource categories and issues. All potentially adverse impacts are addressed through compliance with laws, regulations, and ordinances, or with SCE Proposed Measures and/or Mitigation Measures (as defined in Chapter 4) designed to reduce or eliminate those impacts. The SCE Proposed Measures are incorporated into the Proposed Project, with additional mitigation measures listed in Chapter 4.

All potential impacts from the Proposed Project could be reduced to less than significant levels with the implementation of SCE Proposed Measures and mitigation measures (as described in Chapter 4).

1.0 Project Purpose and Need

1: PROJECT PURPOSE AND NEED

1.1 Project Overview

Southern California Edison Company (SCE) proposes to construct the Valley-Ivyglen 115 kilovolt (kV) Subtransmission Line Project (as described in Chapter 3 and referred to as the Proposed Project) to serve current and projected demand for electricity and to maintain electric system reliability in the southwestern area of Riverside County, the northern portion of the City of Lake Elsinore, and the community of Glen Ivy Hot Springs (Electrical Needs Area as shown on Figure 1.3-1). The Proposed Project is proposed to be operational by mid-2009 to ensure that safe and reliable electric service is available to meet existing and projected customer electrical demands. Construction is scheduled to begin in early 2008. The Proposed Project includes the following components:

- A new 115 kV subtransmission line approximately 25 miles long that traverses between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation (Valley-Ivyglen 115 kV Subtransmission Line or Proposed Subtransmission Line)
- Improvements at SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation to accommodate the Proposed Subtransmission Line
- New fiber optic cable and communication equipment to provide a new path for SCE's telecommunication system along the Proposed Subtransmission Line

The Proposed Subtransmission Line would be located within a combination of existing rights-of-way (ROW), newly acquired ROW, and along public streets and highways as part of SCE's existing franchises in Riverside County and the City of Lake Elsinore.

This Proponent's Environmental Assessment (PEA) includes the information required by the California Public Utilities Commission's (CPUC's) PEA Guidelines (*State of California Public Utilities Commission Information and Criteria List, Appendix B, Section V*), as well as the CPUC's requirements for a Permit to Construct (PTC) pursuant to General Order 131-D (D.94-06-014, Appendix A, as modified by D.95-08-038).

1.2 Project Purpose

The purpose of the Proposed Project is to build necessary electrical facilities to maintain safe and reliable service to SCE's customers, and to meet the forecasted demand for electricity in the Electrical Needs Area. SCE's current forecast shows that the existing subtransmission facilities serving the Electrical Needs Area will exceed designed operating limits as early as 2007. Under the Federal Energy Regulatory Commission (FERC), North American Electric Reliability Council (NERC), Western Electricity Coordinating Council (WECC), and CPUC rules, guidelines and regulations, electrical transmission systems must have sufficient capacity to maintain safe and reliable service to customers. System safety and reliability must be maintained under normal conditions, when all facilities are in service, as well as under abnormal conditions. Abnormal conditions result from equipment or line failures, maintenance outages, or emergency outages that cannot be predicted or controlled.

1.3 Project Need

The Proposed Project is needed to maintain safe and reliable electrical service to SCE's existing customers and to meet the forecasted demand for electricity in the Electrical Needs Area as shown on Figure 1.3-1.

1.3.1 EXISTING SYSTEMS

The Electrical Needs Area is currently served by SCE's Valley 500 kV transmission system. SCE's Valley 500 kV transmission system includes 500/115 kV transformers, 115 kV subtransmission lines, 115/33 kV and 115/12 kV transformers, 33 kV and 12 kV distribution lines, and several substations including the Valley 500/115 kV Substation, the Elsinore 115/33 kV and 115/12 kV Substation, and the Ivyglen 115/12 kV Substation.

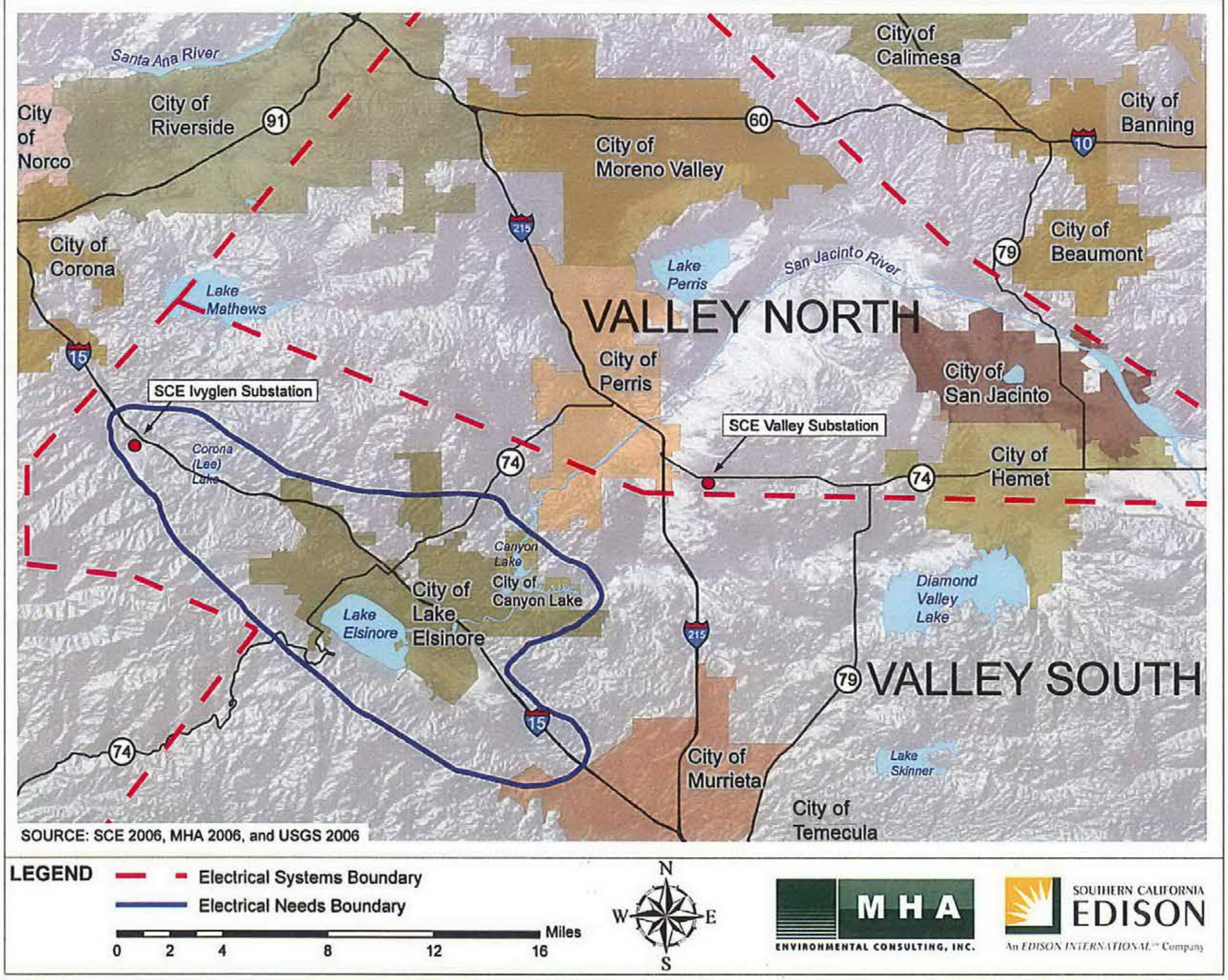
SCE's Valley 500/115 kV Substation is currently configured into two distinct 115 kV electrical subtransmission systems, Valley North and Valley South. These two systems are separate electrically and geographically. Figure 1.3-1 illustrates the areas served by SCE's Valley North system and Valley South system. The Electrical Needs Area is served by the Valley South system. Within the Valley South network, voltage is transformed from 115 kV to 12 kV at the Ivyglen and Elsinore substations. The Elsinore Substation also transforms 115 kV to 33 kV, and provides 33 kV to the Centex, Dryden, and Glen Ivy substations. At the Centex, Dryden, and Glen Ivy substations 33 kV is transformed to 12 kV for distribution.

Both the Valley North system and the Valley South system consist of a network of 115 kV subtransmission lines that provide power to many distribution substations. The distinct and separate electrical networks of Valley North and Valley South do not allow operational flexibility between the two systems. Currently, only one 115 kV subtransmission line, the Valley-Elsinore-Ivyglen 115 kV line, serves the Ivyglen Substation.

1.3.2 ELECTRICAL DEMAND GROWTH AND RELIABILITY

The existing system currently provides electrical service to approximately 12,000 metered customers within the Electrical Needs Area. The general plans for Riverside County and for the cities of Lake Elsinore and Perris forecast that over the next 20 years the Electrical Needs Area will have approximately 28,000 new residential units, 150 acres of new commercial developments, 75 acres of new heavy-industrial developments, and 1,000 acres of new light-industrial development.

Figure 1.3-1: SCE Valley North 115 kV and Valley South 115 kV Systems



At the present time, the amount of electrical power that can be delivered to the Electrical Needs Area is limited to the maximum amount of electrical power that the Valley-Elsinore-Ivyglen line can transmit before its operating limits are exceeded. The capacity of this line is presently limited to 183 megavolt amperes (MVA) under normal operating conditions.

SCE forecasts the loading on subtransmission lines by summing the peak demand at each of the substations served by the subtransmission line. In 2006, the total peak demand of the substations served by the Valley-Elsinore-Ivyglen 115 kV line was 186 MVA.[1] For the year 2009, the forecasted normal peak demand on the line is 202 MVA, and the forecasted emergency peak demand is 293 MVA. Table 1.3-1, Electrical Needs Area - Line Capacity and Peak Demand, and Figure 1.3-2, Valley-Elsinore-Ivyglen 115 kV Subtransmission Line Capacity and Peak Line Flow illustrate the existing capacity limits and forecasted peak line flow for both normal and emergency conditions.

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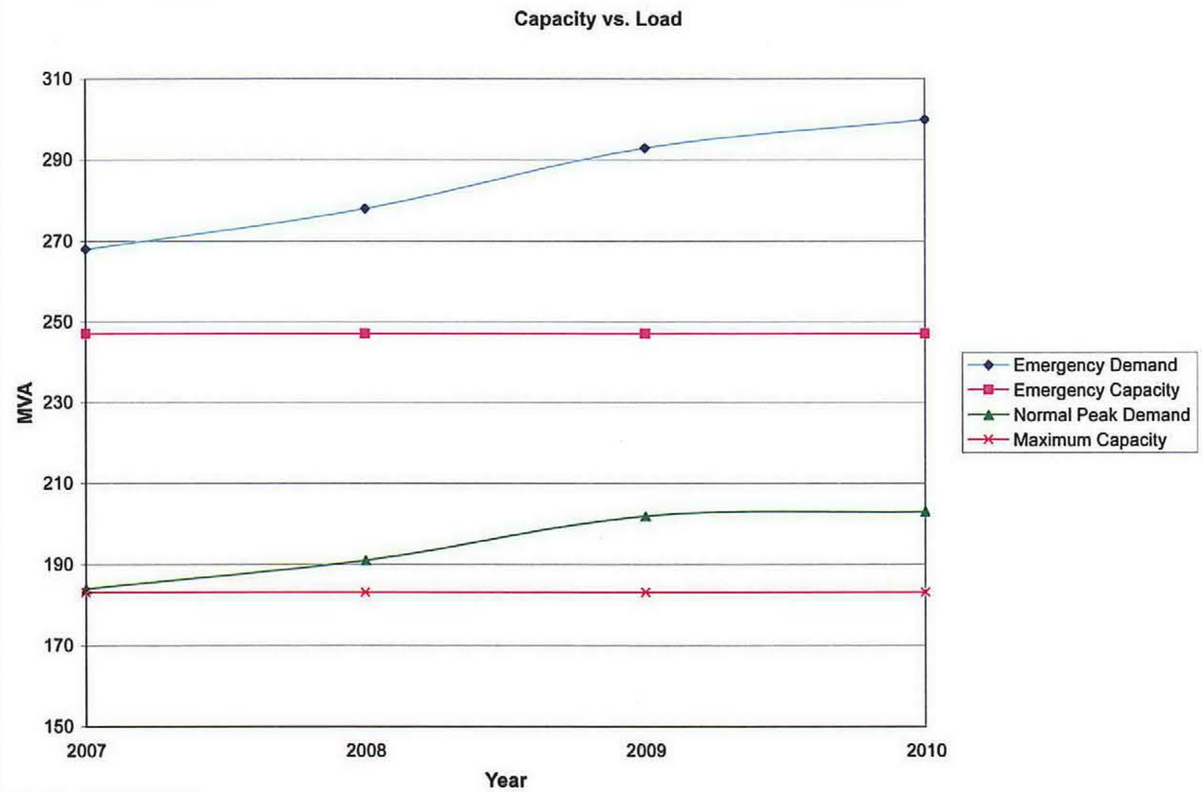
[1] The peak demand at each of the substations does not necessarily occur at the same time. The actual load recorded on the line in 2006 was 170 MVA, which was 93% of the line capacity of 183 MVA. This accounts for the discrepancy between the recorded load of 170 MVA and the total peak demand of 186 MVA. SCE uses the total peak demand of the substations for planning purposes.

Figure 1.3-2: Valley-Elsinore-Ivyglen 115 kV Subtransmission Line Capacity and Peak Line Flow



SOURCE: SCE 2006

LEGEND

Normal Peak Load is the load that is projected to be on a particular element on a day when the 10-year average effective temperature is reached. The 10-year average effective temperature is found by averaging the peak effective temperature over 10 years
Maximum Capacity is the maximum amount of current that the conductor is capable of carrying during Normal Peak Load conditions with all lines in service
Emergency Load is the expected loading that is projected to be on a particular element when there is a single element out of service; this is also referred as an N-1 (Normal-1)
Emergency Capacity is the allowable overload capability of an element during a temporary emergency condition, typically one line out-of-service (N-1)

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Table 1.3-1: Electrical Needs Area - Line Capacity and Peak Demand

	2007	2008	2009	2010
Normal Load (MVA)	184	191	202	203
Normal Capacity (MVA)	183	183	183	183
Normal (% Load)	102	106	113	115
N-1 Emergency Load (MVA)	268	278	293	300
N-1 Emergency Capacity (MVA)	247	247	247	247
N-1 Emergency (%Load)	112	117	124	127

SOURCE: SCE 2006

SCE's system power flow studies that model projected electrical demands indicate that in 2007, the existing Valley-Elsinore-Ivyglen 115 kV subtransmission line will exceed its designed operating limits under normal and abnormal operating conditions. As a result, electric system upgrades are required to reliably serve projected electrical demand within the Electrical Needs Area.

A second 115 kV subtransmission line to the Ivyglen 115/12 kV Substation is also needed in order to be consistent with SCE's reliability criteria. Although the Valley South system is a network of many lines, the Ivyglen Substation is currently served by a single line, the Valley-Elsinore-Ivyglen 115 kV line, which is not consistent with SCE's reliability criteria. The new 115 kV subtransmission line is necessary to ensure that subtransmission line capacity is available to deliver power safely and reliably to serve the electrical demand during both normal and abnormal conditions.

Therefore, to serve projected demand in excess of existing service capacity, and increase reliability in the Electrical Needs Area, SCE is proposing to construct a new 115 kV subtransmission line from the Valley 500/115 kV Substation to the Ivyglen 115/12 kV Substation. The new 115 kV line is needed to ensure that the Valley South 115 kV system has sufficient capacity to maintain safe and reliable service to customers in the Electrical Needs Area.

1.3.3 PROJECT OBJECTIVES

The California Environmental Quality Act (CEQA) and the CEQA Guidelines (Section 15126.6(a)) require the consideration of a range of reasonable alternatives to a proposed project, or to the location of the proposed project that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. SCE has defined the following objectives to meet the Proposed Project's purpose and need described in this chapter:

- Serve projected electrical demand requirements in the Electrical Needs Area beginning in 2009
- Provide a direct connection between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation
- Increase system reliability by locating a second 115 kV subtransmission line within the Electrical Needs Area
- Improve operational and maintenance flexibility on subtransmission lines without interruption of service
- Meet project needs while minimizing environmental impacts
- Meet project needs in a cost-effective manner

SCE considered these objectives in developing a reasonable range of alternatives to the project and the location of the project. Chapter 2 describes the alternatives development process and selection of alternatives for analysis in this PEA.

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2.0 Project Alternatives

2: PROJECT ALTERNATIVES

2.1 Alternatives Overview

The California Environmental Equality Act (CEQA) and CEQA Guidelines Section 15126.6(a) require that an environmental impact report describe a range of reasonable alternatives to a proposed project, or to the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. CEQA Guidelines Section 15126.6(d) requires that sufficient information about each alternative be included to allow meaningful evaluation, analysis, and comparison with the proposed project. In addition, CEQA Guidelines Section 15126.6(e) requires the evaluation of a "no project" alternative to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (No Project Alternative).

The following sections describe the methodology for screening project alternatives. This chapter concludes with a brief description of the alternatives retained for full analysis in the Proponent's Environmental Assessment (PEA).

2.2 Project System Alternatives

2.2.1 SYSTEM ALTERNATIVE EVALUATION METHODOLOGY

The development of system alternatives consists of a four-step process summarized below.

Step 1. Perform technical engineering analyses to determine whether modifying the existing electrical infrastructure can accommodate the forecasted peak electrical demand.

Step 2. Develop system alternatives if the forecasted electrical demand cannot be accommodated by modifying the existing electrical infrastructure and considering feasible upgrades or additions to the existing electrical infrastructure.

Step 3. Evaluate each system alternative in consideration of the extent to which an alternative could feasibly accomplish the proposed project objectives.

Step 4. Eliminate the alternative from further consideration if it is not feasible. If feasible, the alternative is retained for full analysis in the PEA, as required by CPUC General Order 131-D.

If it is determined that a new electrical infrastructure upgrade or addition is required, then route alternatives are considered as described in Sections 2.3 and 2.4, below.

2.2.2 SYSTEM ALTERNATIVES CONSIDERED

SCE considered three system alternatives and the No Project Alternative to meet the forecasted electrical demand within the Electrical Needs Area. These alternatives are listed below and discussed in the following sections.

- **System Alternative 1:** Construct a new 115 kV subtransmission line that traverses between the Valley 500/115 kV and Ivyglen 115/12 kV substations
- **System Alternative 2:** Upgrade the existing electrical subtransmission and distribution system
- **System Alternative 3:** Convert the Ivyglen Substation from a 115/12 kV substation to a 66/12 kV substation and transfer it to the Mira Loma 220/66 kV system
- **System Alternative 4:** No Project Alternative

System Alternative 1: Construct a New 115 kV Subtransmission Line

System Alternative 1 would require the fewest system modifications of the system alternatives considered. This system alternative would entail constructing approximately 25 miles of new 115 kV subtransmission line between the Valley and Ivyglen substations. In order to accommodate the Proposed Subtransmission Line, existing 115 kV line positions would be equipped with circuit breakers and ancillary equipment at both substations, along with installation of a telecommunications line.

This alternative would provide an increase in subtransmission capacity to serve projected electrical demand requirements in the Electrical Needs Area and would provide a second 115 kV subtransmission line to the Ivyglen Substation. The proposed increase in subtransmission capacity would in turn provide greater capacity to the Ivyglen 115/12 kV Substation to increase the distribution supply under both normal and abnormal conditions. By providing a second 115 kV subtransmission line to the Ivyglen Substation this alternative would provide greater reliability to the Electrical Needs Area.

This option also provides the potential for future system upgrades that would accommodate continuing area growth and electrical demand.

The estimated cost of System Alternative 1 is projected at approximately $23 million. Additional components, such as new telecommunications lines, are not included in the cost estimate.[1]

System Alternative 2: Upgrade the Existing Electrical Systems

This system alternative would entail at least five components. These components would include:

1) Increasing transformer capacity at the Glen Ivy 33/12 kV Substation from 5.6 MVA to 28 MVA

[1] The total project cost, including new telecommunications lines, is projected at approximately $25 million.

2) Constructing two new underground 33 kV lines from the Elsinore 115/33 kV Substation to the Glen Ivy 33/12 kV Substation
3) Reconductoring approximately 14.5 miles of the Valley-Elsinore-Ivyglen 115 kV subtransmission line
4) Upgrading the Glen Ivy 33/12 kV and Elsinore 115/33 kV substations
5) Building two new 12 kV distribution lines

Increasing the transformer capacity of the Glen Ivy Substation from 5.6 MVA to 28 MVA would require the addition of two new underground 33 kV lines to the Glen Ivy Substation to provide capacity and to meet SCE's reliability criteria. These two new 33 kV lines would originate at the Elsinore 115/33 kV Substation, and the combined lines would be approximately 27 miles in length. To accommodate the additional electrical demand, the conductors on the Valley-Elsinore section of the Valley-Elsinore-Ivyglen 115 kV subtransmission line would be replaced with larger conductors.

The additional 33 kV lines would require upgrades to both the Glen Ivy 33/12 kV and Elsinore 115/33 kV substations. These upgrades would require substation expansions and acquisition of additional real estate at the Elsinore Substation.

Two new 12 kV distribution lines from the Glen Ivy Substation would include approximately seven miles of new construction and would provide for the ability to serve the electrical demand.

This alternative provides limited potential to accommodate future growth. It does not eliminate the need to construct a 115 kV subtransmission line in the future.

The estimated cost of System Alternative 2 is projected at approximately $58 million. Additional components, such as new telecommunications upgrades, are not included in the cost estimate.

System Alternative 3: Convert the Ivyglen Substation from 115/12 kV to 66/12 kV and Transfer it from the Valley 500/115 kV System to the Mira Loma 220/66 kV System

System Alternative 3 would convert the Ivyglen Substation from a 115/12 kV substation to a 66/12 kV substation, and transfer it to the Mira Loma 220/66 kV system. System Alternative 3 would also necessitate additional upgrades to the Mira Loma 220/66 kV System. This system alternative would include the three components listed below:

1) Construct three new 66 kV subtransmission lines
2) Reconfigure an existing 66 kV line
3) Build two new 12 kV distribution lines

The Ivyglen Substation is currently served from a 115 kV system, while Mira Loma is a 66 kV system. Transferring the Ivyglen Substation from the Valley 115 kV system to the Mira Loma 66 kV system would require reconfiguring or rebuilding the Ivyglen Substation to accommodate the necessary equipment changes required to convert it from a 115 kV substation to a 66 kV substation. This would include replacing the existing 115/12 kV 28 MVA transformers with two new 66/12 kV 28 MVA transformers.

In order to provide the required power to the newly configured Ivyglen 66/12 kV Substation, two new 66 kV lines would be constructed from the Chase 66/12 kV Substation to the Ivyglen 66/12 kV Substation. Each new line would be approximately 7.5 miles long and would follow different line routes. A third new 66 kV subtransmission line between the Chase and Jefferson substations would be needed as well.

As a result of this added electrical demand on the Mira Loma 220 kV System, additional system upgrades would be necessary. New electrical facilities at the Mira Loma, Chase, and Jefferson substations would require additional subtransmission line positions, including circuit breakers and other associated equipment.

System Alternative 3 provides limited potential for future growth and does not eliminate the need for an additional future 115 kV subtransmission line in the Electrical Needs Area. This alternative would limit SCE's ability to transfer distribution load between the Ivyglen and Elsinore or Glen Ivy substations without service interruptions.

The estimated cost of System Alternative 3 is approximately $37 million. Additional components, such as new telecommunications upgrades, are not included in the cost estimate.

System Alternative 4: No Project Alternative

Under the No Project Alternative, no action would be taken. This alternative would require SCE to serve the Electrical Needs Area from the existing substations and subtransmission lines, with no upgrades or modifications. As discussed in Chapter 1, SCE's current forecast shows that the electric demand in the Electrical Needs Area would exceed existing capacity in 2007. This alternative would result in a reduced level of reliability, leading to blackouts. Therefore, this alternative would not meet the project objectives and was eliminated from further consideration.

System Alternatives Cost Summary

The estimated costs associated with the three viable system alternatives are listed below in Table 2.2-1.

Table 2.2-1: System Alternatives Cost Comparison

Alternative	Description	Estimate Cost
1	Construct a new 115 kV subtransmission line between the Valley and Ivyglen substations	$23 million
2	Upgrade the existing system	$58 million
3	Convert the Ivyglen Substation from 115 kV to 66 kV	$37 million

SOURCE: SCE 2006

System Alternatives Recommendation

System Alternative 1 satisfies the Project Objectives, which are listed below:

- Serve projected electrical demand requirements in the Electrical Needs Area beginning in 2009
- Provide a direct connection between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation
- Increase system reliability by locating a second 115 kV subtransmission line within the Electrical Needs Area
- Improve operational and maintenance flexibility on subtransmission lines without interruption of service
- Meet project need while minimizing environmental impacts
- Meet project need in a cost-effective manner

System Alternative 1 would require the fewest system modifications of the system alternatives considered. This alternative would provide the most capacity of the three system alternatives considered to serve projected electrical demand requirements in the Electrical Needs Area and would provide a second 115 kV subtransmission line to the Ivyglen Substation. The second subtransmission line would allow SCE to perform maintenance by providing the ability to remove one line from service without interrupting service to customers. In addition, the second subtransmission line would enable SCE to serve the demand under emergency conditions. This system configuration enables operational flexibility to transfer load between Elsinore, Ivyglen, and Glen Ivy substations without interruption. The proposed increase in subtransmission capacity would in turn provide greater capacity to the Ivyglen 115/12 kV Substation to increase the distribution supply under both normal and abnormal conditions.

This alternative provides the potential for future system upgrades that would accommodate continuing area growth and electrical demand. System Alternative 1 also has the fewest environmental impacts of the three system alternatives evaluated.

System Alternative 2 does not provide a second source of power to the Ivyglen Substation and would not meet SCE's subtransmission reliability criteria. In addition, substantial upgrades to the existing 115 kV network would still be required within SCE's 10-year forecast to serve the Electrical Needs Area.

The 33 kV upgrades required in System Alternative 2 between the Elsinore Substation and the Glen Ivy Substation would have to be constructed in an area with multiple existing overhead lines. As a result, the new 33 kV lines would be constructed underground. Additionally, these lines would require a minimum of two paths (approximately 27 miles total). The underground duct banks would require substantial excavation along the entire length of the line routes, presenting the potential for significant environmental impacts.

System Alternative 2 would result in significant environmental impacts while still requiring a future 115 kV line to be constructed into the Ivyglen Substation. In addition, the cost of constructing System Alternative 2 exceeds that of System Alternative 1. Therefore, System Alternative 2 offers only an interim solution and does not meet the Project Objectives of increasing system reliability and improving operational flexibility. For these reasons, and the reasons described above, System Alternative 2 was eliminated from further consideration.

System Alternative 3 meets the Project Objectives for serving projected load, increasing system reliability, and improving subtransmission operational flexibility. However, rebuilding the Ivyglen Substation from 115 kV to 66 kV would require that the existing Valley-Elsinore-Ivyglen 115 kV line be de-energized for an extended period of time. Because there is no other available source of electricity to the customers served by the Ivyglen Substation, those customers would be without electricity during construction, which could last several months. In addition, the cost of constructing System Alternative 3 exceeds that of System Alternative 1. For these reasons, System Alternative 3 was eliminated from further consideration.

Taking all the above into consideration, SCE selected System Alternative 1 as the Preferred System Alternative for further evaluation in this PEA.

2.3 Subtransmission Corridor Alternatives

SCE considered several different routing alternatives for System Alternative 1. Each alternative began at the Valley Substation and ended at the Ivyglen Substation. The routing options were divided into three alternative corridors: northern, middle, and southern (Figure 2.3-1). Each alternative corridor shared a common eastern segment running from the Valley Substation to Highway 74. These three corridors are summarized below in section 2.3.2.

2.3.1 CORRIDOR EVALUATION METHODOLOGY

SCE initiated a route and corridor evaluation process to identify potential subtransmission line corridor alternatives between the Valley and Ivyglen substations. SCE identified three potential corridors connecting these two substations, along with multiple route segment alternatives within each corridor. SCE developed a screening criteria process that included the analysis of engineering, environmental, and land use factors. SCE considered the following factors in analyzing the corridor alternatives:

- Ability to meet project objectives
- Ability to meet critical engineering requirements
- Ability to serve future electrical needs
- Existence of transmission rights-of-way
- Existence of subtransmission and distribution rights-of-way
- Ground topography and slope steepness
- Line route distance between substations
- Proximity to existing and planned roads
- Future visibility of line segments

Each of the three corridors considered and evaluated is summarized below.

2.3.2 CORRIDOR ALTERNATIVES

Southern Corridor Alternative

The southern corridor would begin at the Valley Substation and proceed west toward Highway 74. It would proceed southwest from the point where the existing Valley-Serrano 500 kV ROW crosses Highway 74. It would then continue southwest along Highway 74 until reaching I-15, where it would turn northwest along the I-15 and Temescal Canyon Road corridor.

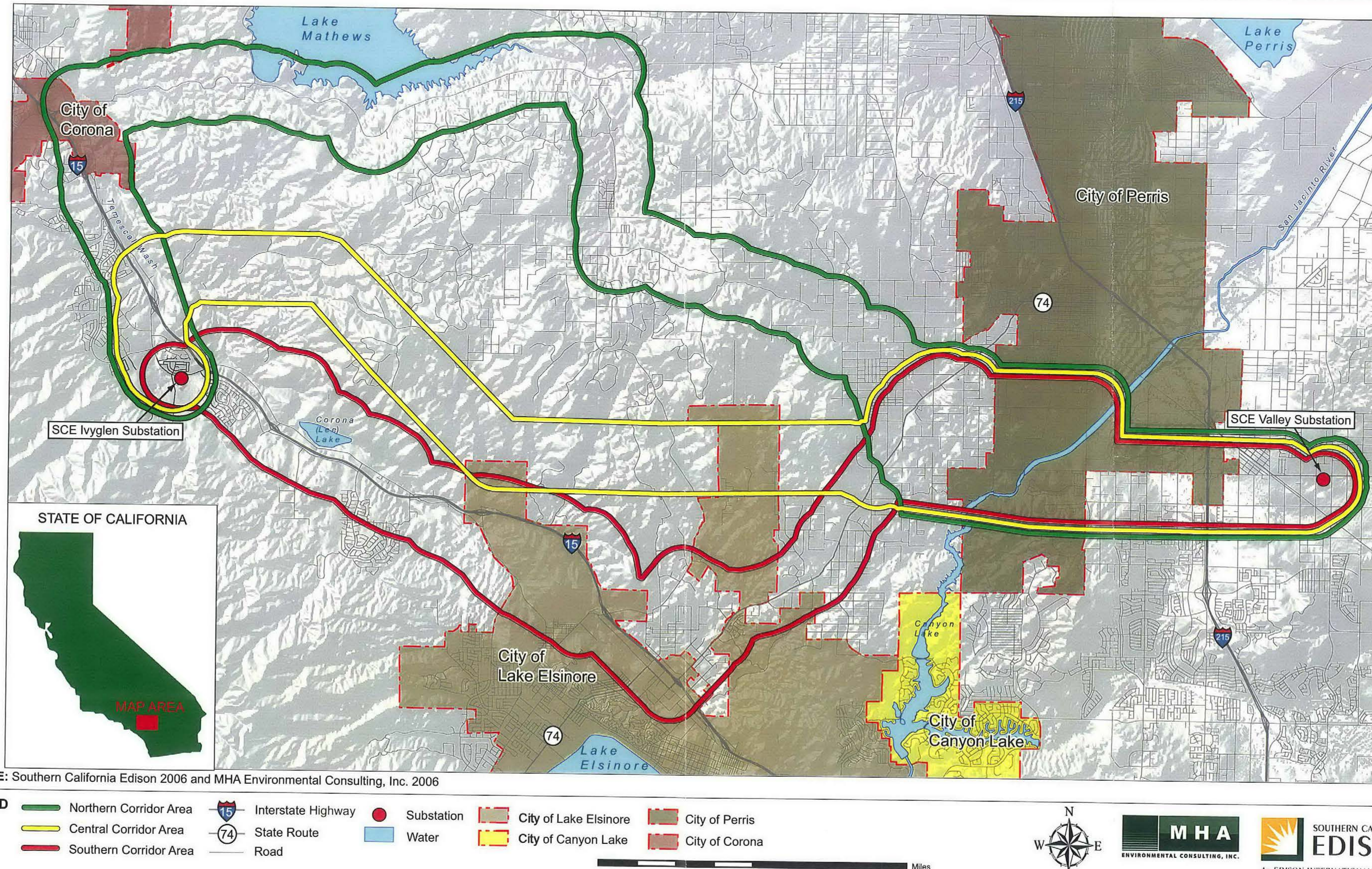
The southern corridor would meet engineering and operational requirements. First, it would serve the basic objective of providing a direct connection between the Valley and Ivyglen substations. In addition, it could be utilized for connections to potential future electrical facilities in the Valley South system. Thus, the southern corridor could serve other facilities in southern Riverside County and would support the project objective of increasing system reliability.

A southern corridor in the general vicinity of the existing Valley-Elsinore-Ivyglen 115 kV subtransmission line would also address the continuing need for future electrical facilities in the Valley South system.

Middle Corridor Alternative

The middle corridor would begin at the Valley Substation and run west toward Highway 74. This corridor would then proceed westward from Highway 74 along the existing Valley-Serrano 500 kV ROW to an area north of the Ivyglen Substation. From this 500 kV ROW, several alternative routes were considered to connect the proposed line to the Ivyglen Substation. Due to significant design and operational differences between 500 kV transmission lines and 115 kV subtransmission lines, construction of a new 115 kV line within the existing 500 kV ROW would create multiple adverse environmental impacts.

Figure 2.3-1: Subtransmission Route Corridors



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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A network of new access roads would be needed to construct the proposed 115 kV subtransmission line through mountainous terrain along the existing 500 kV ROW west of Highway 74. Road construction would require extensive earthmoving activities, including rock blasting, grading on steep slopes, and filling of natural drainages. These construction activities would present potential adverse impacts to biological resources, air quality, water quality, erosion, and noise. In addition, future road maintenance and operations would generate adverse impacts to biological resources, air quality, water quality, and erosion. Multiple new access roads traversing across the steep hillsides would contrast dramatically with the existing relatively undisturbed steep terrain, resulting in unavoidable significant impacts to visual resources.

Additionally, the middle corridor would not meet engineering and operational requirements. Although it would serve the objective of providing a direct connection between the Valley and Ivyglen substations, it would not be feasible to utilize for connections to potential future electrical facilities in the Valley South system. This corridor would pass through a sparsely developed mountainous area. From this remote area, a new 115 kV line within the middle corridor would be too far from existing 115 kV facilities in southern Riverside County and could not support the project objective of serving projected electrical demand in the Valley South system. Because the middle corridor alternative would cause potentially significant environmental impacts, would not meet engineering requirements, and would not serve projected electrical demand in the Valley South system, this corridor alternative was eliminated from further consideration.

Northern Corridor Alternative

The northern corridor would begin at the Valley Substation and run west toward Highway 74. This corridor would then proceed northwest along existing streets through residential neighborhoods and open areas. After several miles along Theda Street, Mountain Avenue, Palm Street, Ellis Avenue, Post Road, Santa Rosa Mine Road, and Gavilan Road. The northern corridor would then proceed west along Cajalco Road along the southern side of Lake Mathews. From Cajalco Road, this corridor would proceed south on Temescal Canyon Road to the Ivyglen Substation.

This corridor would present multiple potential adverse environmental impacts, especially to visual resources. The corridor would follow Cajalco Road, which is a Riverside County Eligible Scenic Highway. Cajalco Road presents scenic vistas of Lake Mathews and the undeveloped surrounding area. Thus, a new 115 kV subtransmission line in this area would be a prominent visual feature along this road in stark contrast to the surrounding open countryside, resulting in significant visual impacts.

Cajalco Road traverses an undisturbed habitat conservation area and bald eagle habitat surrounding Lake Mathews. Thus, potential adverse construction impacts to biological resources would be possible, as well as potential operational impacts to bald eagles.

Additionally, the northern corridor would not meet engineering and operational requirements. Although it would serve the objective of providing a direct connection between the Valley and Ivyglen substations, it would not be feasible to utilize for connections to potential future electrical facilities in the Valley South system. As noted above under System Alternatives, the electrical systems serving the northern portions of Riverside County are based on a 66 kV system. The new 115 kV subtransmission line would be incompatible with other facilities in the northern region. Because the northern corridor alternative would cause significant environmental impacts and would not meet operational requirements, this corridor alternative was eliminated from further consideration.

2.3.3 RECOMMENDATION – PREFERRED CORRIDOR ALTERNATIVE

The southern corridor alternative is the most forward looking of the three corridor alternatives presented because it would provide for future system upgrades to accommodate continuing growth in the Electrical Needs Area. This alternative would also have the fewest environmental impacts. As such, the middle and northern corridors were eliminated from further consideration and the southern corridor was selected as the preferred corridor alternative. Multiple alternative route segments within this corridor were considered as discussed below in Section 2.4, Route Segment Alternatives.

2.4 Route Segment Alternatives

SCE recommends constructing the new Valley-Ivyglen 115 kV subtransmission line within the southern corridor as described above in Section 2.3. Within the southern corridor, defined as the Project Study Area, SCE identified multiple route segments. SCE analyzed the routing alternatives by examining these individual route segments.

2.4.1 EVALUATION METHODOLOGY

SCE delineated 21 different alternative route segments within the southern corridor. Figure 2.4-1 illustrates the 21 alternative segments considered by SCE. Figures 2.4-2 to 2.4-7 are detailed illustrations of the alternative segments.

To identify potential subtransmission line route alternatives within the Project Study Area, SCE considered the factors listed below.

- Existence of transmission rights-of-way
- Existence of subtransmission and distribution rights-of-way
- Ground topography and slope steepness
- Line route distance between substations
- Proximity to existing and planned roads
- Future visibility of line segments

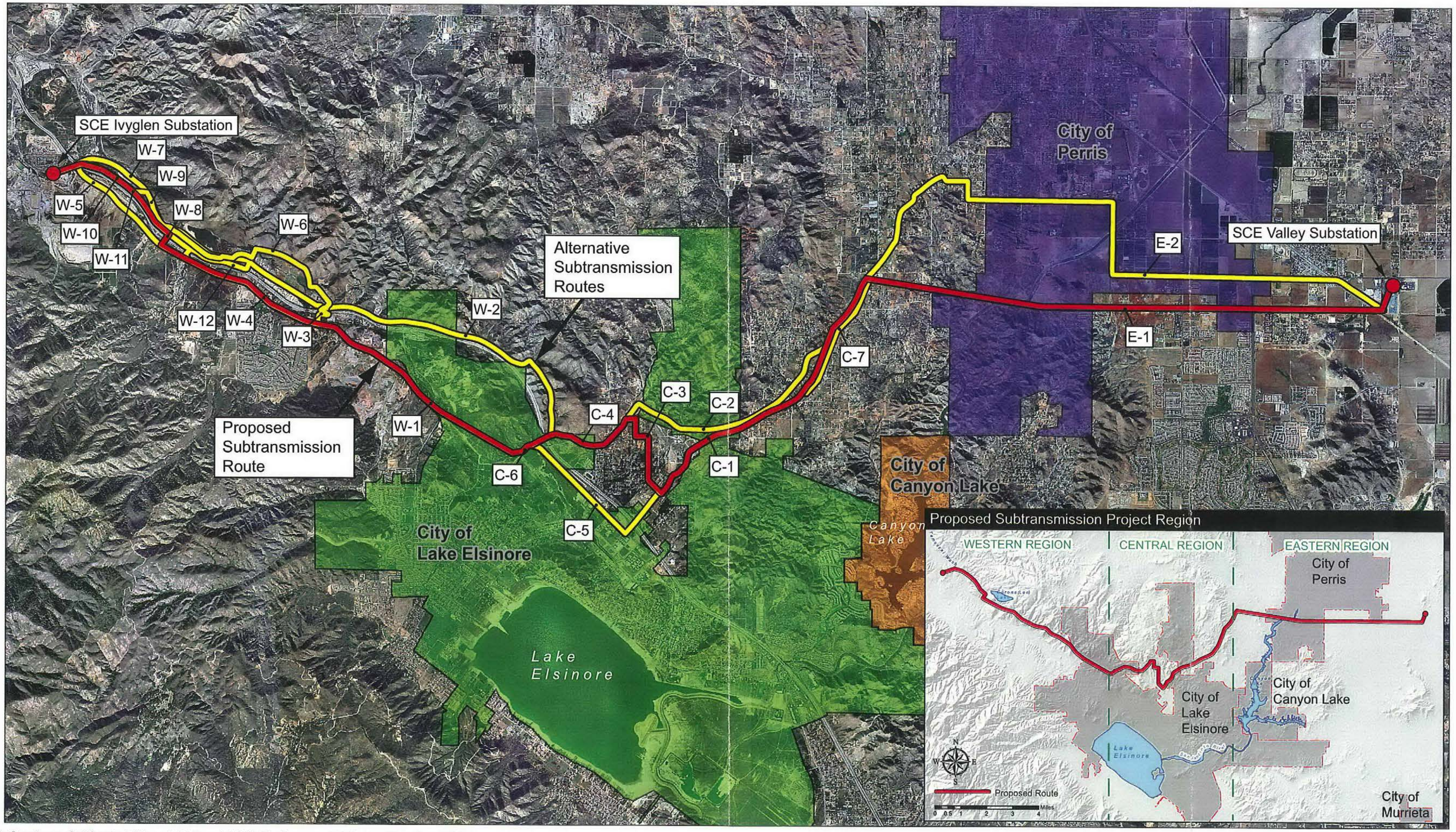
2.4.2 ALTERNATIVE ROUTE SEGMENT DESCRIPTIONS

SCE considered several different routing alternatives for the Valley-Ivyglen 115 kV Subtransmission Line. Each alternative segment is located within the southern corridor. The southern corridor begins at the Valley Substation and terminates at the Ivyglen Substation. Alternative routes were subdivided into individual segments to facilitate project analysis. Twenty-one alternative route segments were identified within the southern corridor and evaluated for this project.

SCE divided the southern corridor into three regions: Eastern (City of Perris area), Central (City of Lake Elsinore area) and Western (Glen Ivy/Corona Lake area). This segmentation enhances the comparison of alternatives by grouping alternative route segments into regions with similar settings (and potential impacts).

Designations for each route segment discussed in the PEA include a letter representing the region (E = Eastern Region, C = Central Region, W = Western Region) and a number representing the segment within the region (i.e., E-1, C-1 or W-1). Table 2.4-1 summarizes the alternative route segments evaluated for this project. Figure 2.4-1 illustrates several alternative segments considered by SCE.

Figure 2.4-1: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Alternative Routes
- Substation
- City of Canyon Lake
- City of Lake Elsinore
- City of Perris

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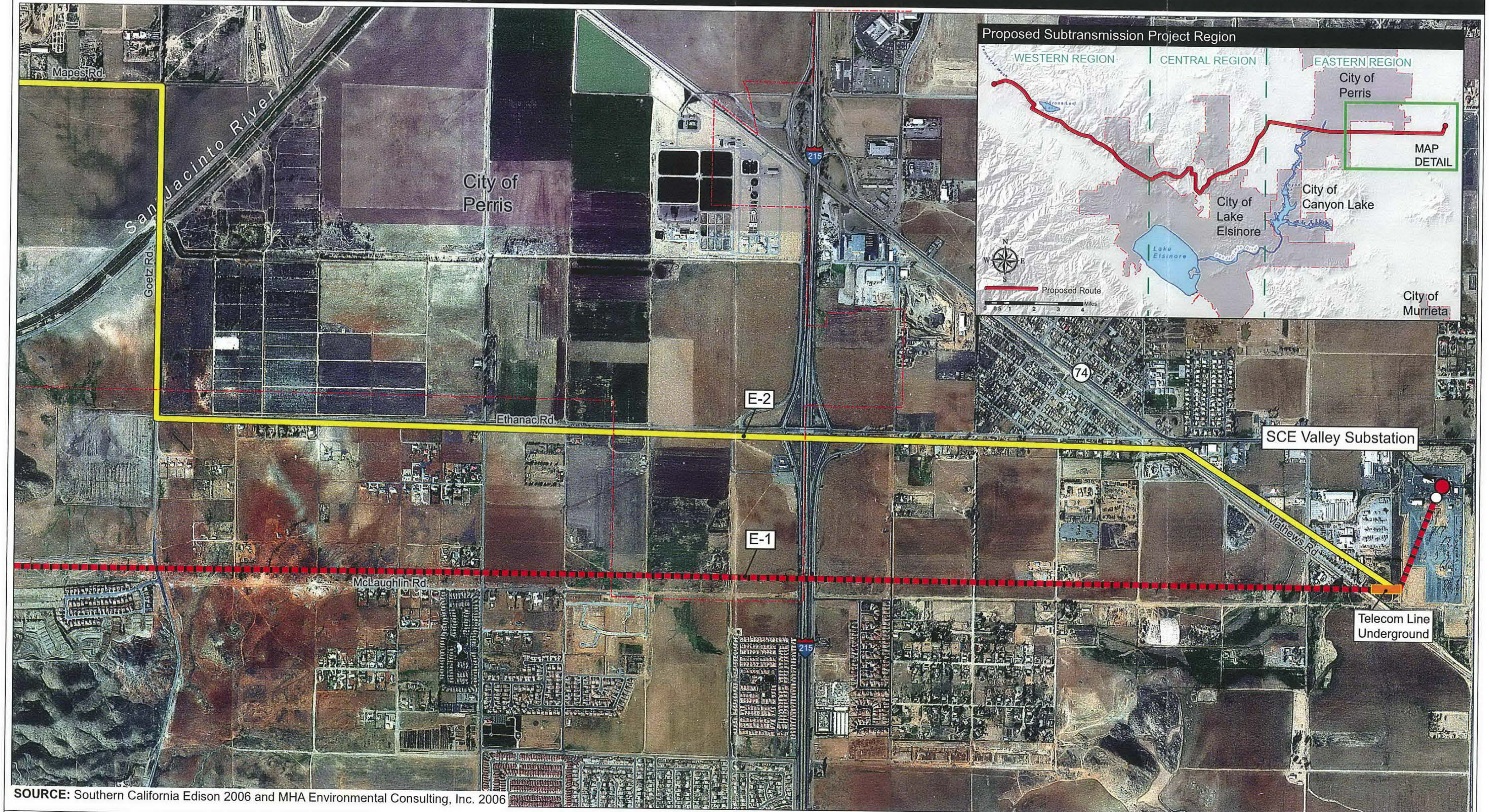
Figure 2.4-2: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

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

0 0.1 0.2 0.4 0.6 0.8 Miles

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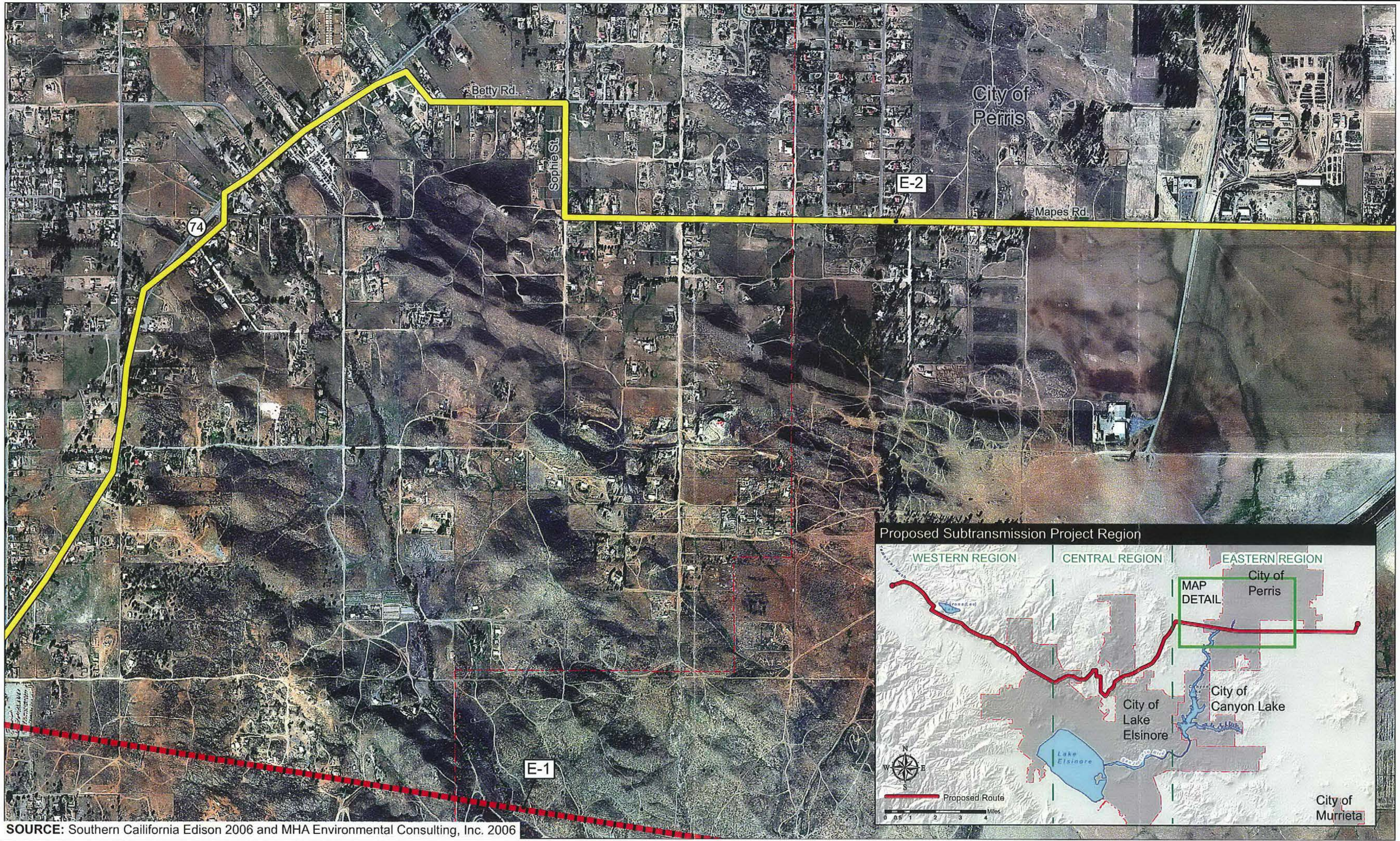
Figure 2.4-3: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern Cailifornia Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

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

0 0.125 0.25 0.5 0.75 Miles

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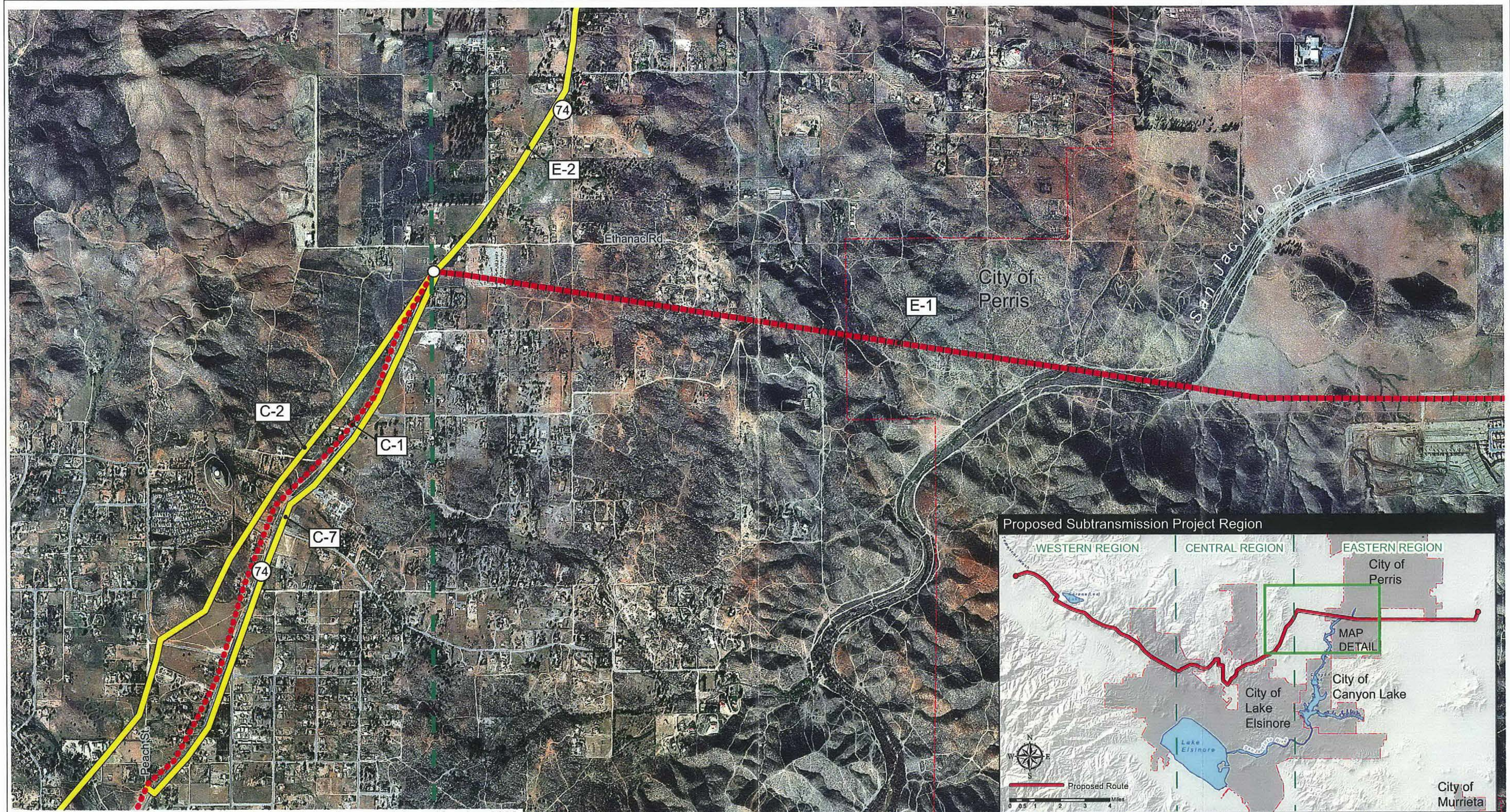
Figure 2.4-4: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

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

Miles: 0 0.1 0.2 0.4 0.6 0.8

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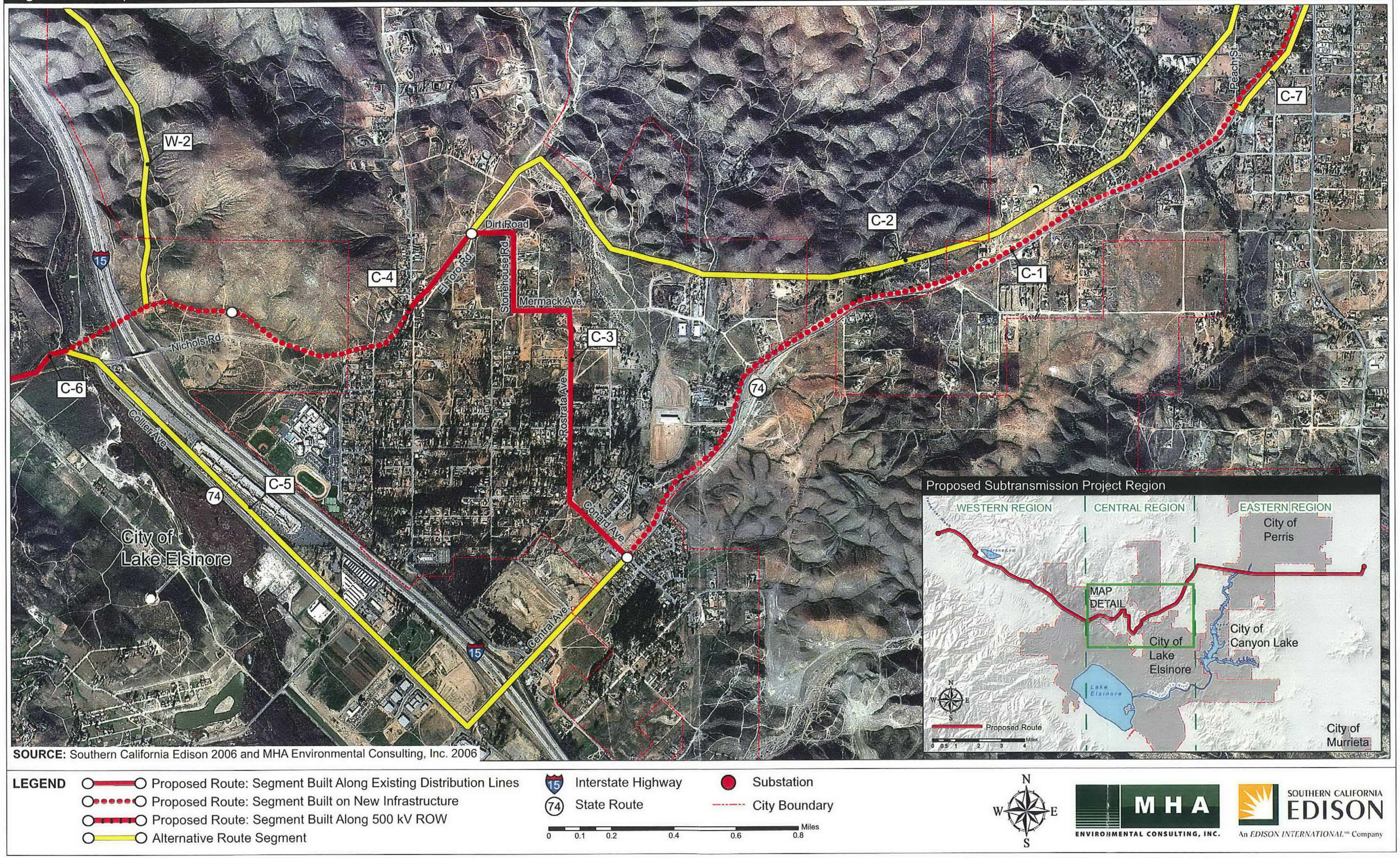
Figure 2.4-5: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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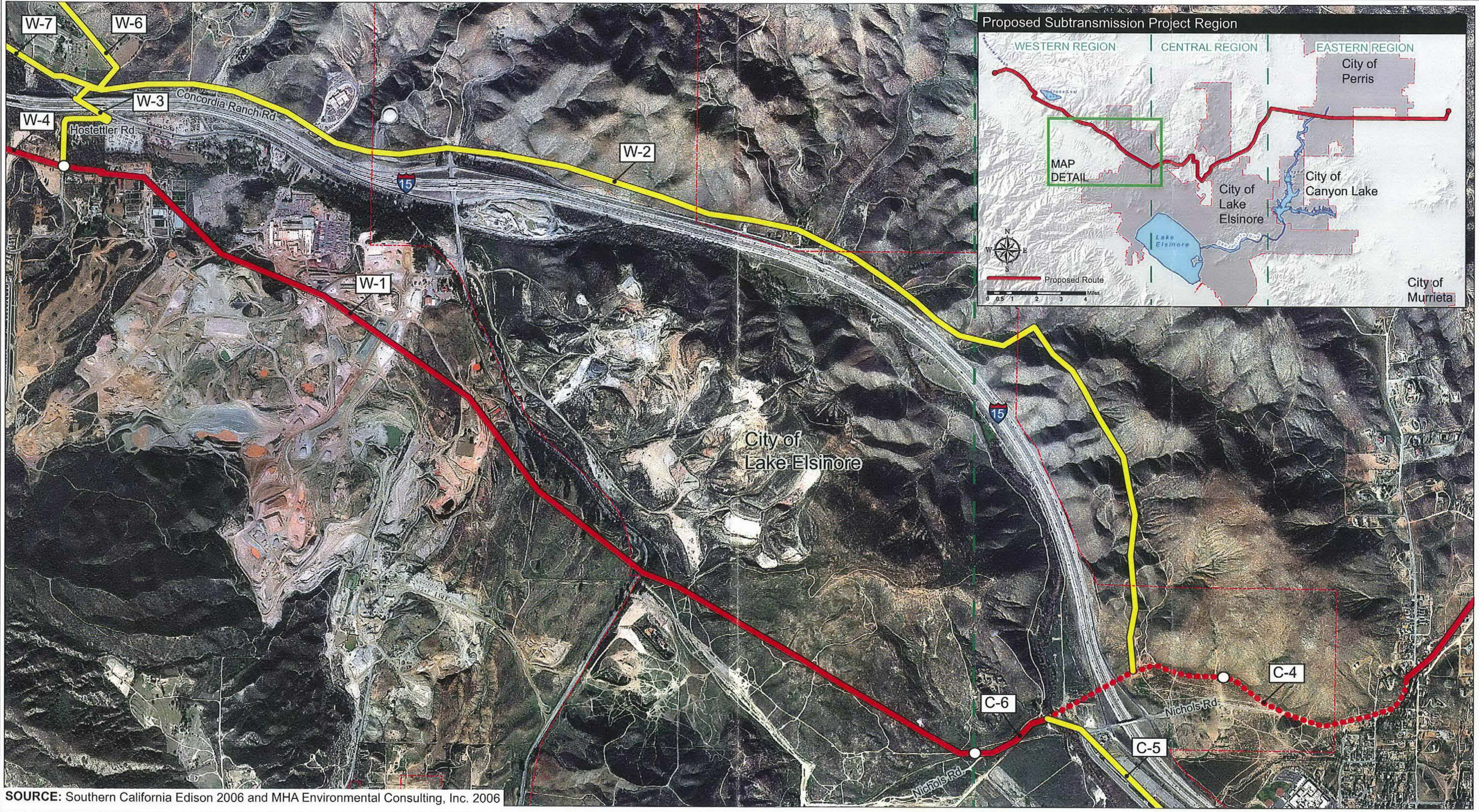
Figure 2.4-6: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

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

0 0.1 0.2 0.4 0.6 0.8 Miles

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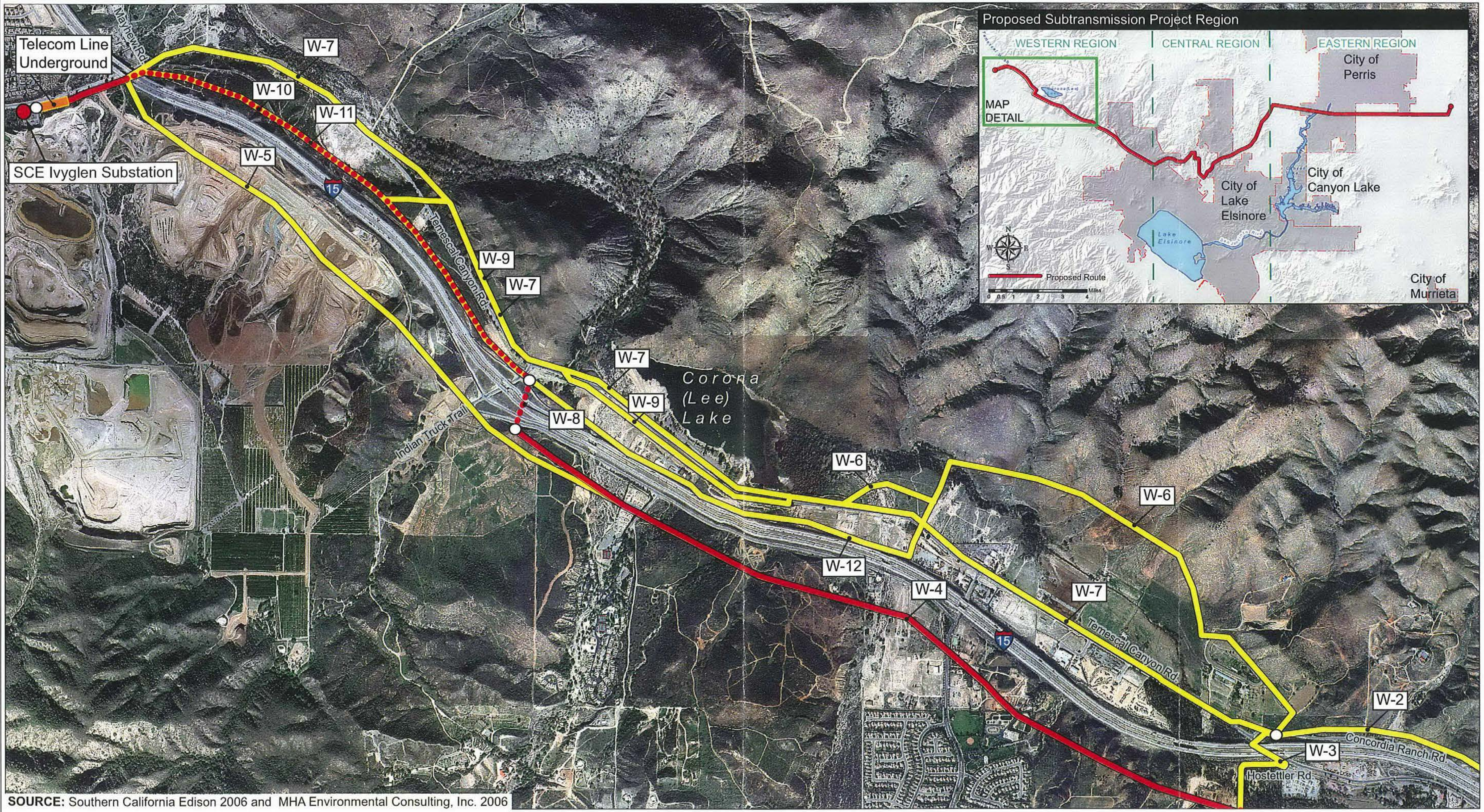
Figure 2.4-7: Proposed Subtransmission and Alternative Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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

Miles 0 0.1 0.2 0.4 0.6 0.8

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2.4.3 ALTERNATIVE ROUTE SEGMENTS ELIMINATED FROM FURTHER CONSIDERATION

Based on engineering and environmental considerations, six alternative route segments listed in Table 2.4-1 were considered infeasible. As such, Alternative Route Segments C-5, W-6. W-7, W-9, W-11, and W-12 were eliminated from further consideration. These six alternative route segments are discussed below.

Alternative Route Segment C-5

Alternative Route Segment C-5 would begin at the intersection of Highway 74 and Conard Avenue. It would proceed southwest along Highway 74 to Collier Avenue. It would then follow Collier Avenue northwest along the Valley-Elsinore-Ivyglen 115 kV line on new double circuit tubular steel poles (TSPs).

Construction would require removing the existing Valley-Elsinore-Ivyglen 115 kV line from service for extended periods of time over many weeks of construction. Since the Valley-Elsinore-Ivyglen 115 kV line is the only line feeding the Ivyglen Substation, removing this line from service would also result in taking the substation out of service. Associated extended service outages to the Glen Ivy Hot Springs community and surrounding area are not desirable. Therefore, this alternative is eliminated from further consideration.

Alternative Route Segment W-6

Alternative Route Segment W-6 would begin at the I-15 crossing over Temescal Canyon Road near its intersection with Concordia Ranch Road. Alternative Route Segment W-6 would run northeast a short distance along Concordia Ranch Road before traveling north and west on a new ROW. This new ROW would follow along the base of the hills north of I-15 toward the east side of Corona Lake before turning south to Temescal Canyon Road and following Temescal Canyon Road northwest for approximately 0.2 mile.

Alternative Route Segment W-6 is a continuation of Alternative Route Segment W-9 (discussed below). Since Alternative Route Segment W-9 would entail removing the existing Valley-Elsinore-Ivyglen 115 kV line from service for extended periods of time, and was eliminated from further consideration, Alternative Route Segment W-6 is also eliminated from further consideration.

Alternative Route Segment W-7

Alternative Route Segment W-7 would begin near the intersection of Temescal Canyon Road and Concordia Ranch Road. It would follow along the north side of Temescal Canyon Road, from I-15 west of Concordia Ranch Road to Mayhew Road. From Mayhew Road, it would travel west along Temescal Canyon Road to the Ivyglen Substation.

Sections of Alternative Route Segment W-7 would cross through riparian areas and active river channels. As such, potentially adverse environmental impacts to biological resources and water quality would result. Placing electrical facilities within an active river channel would be inconsistent with the Riverside County General Plan, Safety Element. Poles along the route section within the active river channel would be subject to erosion and damage, thus creating a system reliability issue.

Alternative Route Segment W-7 would require installing new TSPs along Temescal Canyon Road directly across from the existing Valley-Elsinore-Ivyglen 115 kV line. This would create significant visual impacts because 115 kV subtransmission lines would have to be located on both sides of the narrow Temescal Canyon Road. For these reasons, this alternative is eliminated from further consideration.

Table 2.4-1: Alternative Route Segment Summary

Alternative Segment Designation	Line Description
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.
E-2	Proceeds northwest from Matthews and McLaughlin Roads. Follows Ethanac Road west to Goetz Road. From this point, it proceeds north on Goetz Road to Mapes Road, and then to Sophie Street. It follows Sophie Street north on to Betty Road, then proceeds west on Betty Road to Highway 74 and follows the highway to Ethanac Road.
C-1	Proceeds southwest along the northwest side of Highway 74, from the existing 500 kV transmission ROW to Conard Avenue.
C-2	Proceeds southwest along the existing 33 kV and 12 kV lines that are located northwest of Highway 74, for approximately 5.8 miles, turning west until reaching El Toro Road.
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.
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.
C-5	Proceeds southwest along Highway 74 from Conard Avenue to Collier Avenue. Turns northeast and follows Collier Avenue along the Valley-Elsinore-Ivyglen 115 kV line on new double circuit TSPs to Nichols Road.
C-6	Proceeds west near Nichols Road, crosses I-15, and then back onto Nichols Road for approximately 1 mile to an existing 33 kV line ROW.
C-7	Travels along the southeast side of Highway 74. Follows Highway 74 southwest from the existing 500 kV transmission line ROW to Peach Street. Crosses to the northwest side of Highway 74 at Peach Street.
W-1	Follows an existing 33 kV line ROW for approximately 4 miles from Nichols Road to Hostettler Road.
W-2	Follows I-15 north from Nichols Road to Concordia Ranch Road; travels north through Bureau of Land Management (BLM) land to Big Canyon Drive and Walker Canyon Road; proceeds west along the north side of I-15 to Concordia Ranch Road and Temescal Canyon.
W-3	Crosses I-15 on two existing 115 kV TSPs at the Temescal Canyon Road underpass.
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.
W-5	Follows the south side of I-15 northwest, from the intersection of Hostettler Road and Desperado Drive, to Temescal Canyon Road, east of the Ivyglen Substation.
W-6	Follows the base of the hills north of I-15 on a new ROW, toward the east side of Corona Lake for 1.6 miles.
W-7	Follows the north side of Temescal Canyon Road from west of Concordia Ranch Road to Mayhew Road; from Mayhew Road west to the Ivyglen Substation.
W-8	Crosses over I-15 a short distance southeast of Indian Truck Trail, near an existing 12 kV line crossing.
W-9	Follows Temescal Canyon Road for approximately 2 miles, with a portion on existing 115 kV poles (south side Temescal Canyon Road) and a portion on new poles (north side Temescal Canyon Road).
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.
W-11	Crosses to the south side of Temescal Canyon Road, approximately 1 mile southeast of the Temescal Canyon Road underpass beneath I-15, and parallels Temescal Canyon Road between I-15 and an existing 115 kV line; the proposed new line would be on the same poles with the existing line from I-15 crossing into the Ivyglen Substation.
W-12	Proceeds northwest on the north side of I-15, between I-15 & Temescal Canyon Road, crossing Indian Truck Trail, then continuing northwest toward the Temescal Canyon Road underpass at I-15.

SOURCE: SCE 2006

Alternative Route Segment W-9

Alternative Route Segment W-9 would begin on the north side of Temescal Canyon Road approximately 0.25 miles east of Corona Lake. It would follow along the north side of Temescal Canyon Road a short distance before crossing to the south side of Temescal Canyon Road. It would include new double-circuit structures for about 0.6 miles near Corona Lake before crossing back to the north side of Temescal Canyon Road. It would travel along the north side of Temescal Canyon Road for approximately 0.5 miles until crossing Temescal Canyon Road again to avoid an active river channel.

Sections of Alternative Route Segment W-9 would require rebuilding the existing Valley-Elsinore-Ivyglen 115 kV line to a double circuit pole line that would include both the existing 115 kV line and the new Valley-Ivyglen 115 kV line on the south side of Corona Lake. New double-circuit poles would be required along the route section on the south side of Temescal Canyon Road. Construction would require removing the existing Valley-Elsinore-Ivyglen 115 kV line from service for extended periods of time over many weeks of construction. Since the Valley-Elsinore-Ivyglen 115 kV line is the only line feeding the Ivyglen Substation, removing this line from service would also result in taking the substation out of service. Associated extended service outages to the Glen Ivy Hot Springs community and surrounding area are not desirable. Therefore, this alternative is eliminated from further consideration.

Alternative Route Segment W-11

Alternative Route Segment W-11 would cross Temescal Canyon Road and the existing Valley-Elsinore-Ivyglen 115 kV line, and continue northwest for approximately one mile. It would be located between Temescal Canyon Road and I-15. Alternative Route Segment W-11 would cross I-15 at Temescal Canyon Road and continues into the Ivyglen Substation.

Alternative Route Segment W-11 would be a continuation of Alternative Route Segment W-9. Since Alternative Route Segment W-9 would entail removing the existing Valley-Elsinore-Ivyglen 115 kV line from service for extended periods of time, and was eliminated from further consideration, Alternative Route Segment W-11 is also eliminated from further consideration.

Alternative Route Segment W-12

Alternative Route Segment W-12 would begin at a point approximately 0.5 miles northwest of the intersection of Horsethief Canyon and Temescal Canyon Roads. From this point, it would proceed in a southwestern direction, crossing Temescal Creek, until reaching an existing 12 kV circuit. It would continue southwest toward I-15, crossing Temescal Canyon Road. Between Temescal Canyon Road and I-15, it would proceed northwest between Temescal Canyon Road and I-15. It would continue northwest, crossing Indian Truck Trail, until reaching Temescal Canyon Road and the existing 115 kV line on the east side of I-15.

The eastern portion of Alternative Route Segment W-12 would cross several existing businesses, including several large above ground storage tanks. Selecting this alternative route segment would likely require purchasing these sites and relocating the businesses. Therefore, this alternative segment is eliminated from further consideration.

2.4.4 ALTERNATIVE ROUTE SEGMENTS EVALUATED

Fifteen alternative segments comprise the alternative route segments evaluated in this PEA. Each of the fifteen remaining alternative segments evaluated in the PEA are described in Table 2.4-2.

Table 2.4-2: Alternative Route Segments Evaluated

Alternative Route Segment	Description
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. Alternative Route Segment E-1 would consist of approximately 192 Light Duty Steel (LDS) poles, eight TSPs, and 40,000 circuit feet of 954 Stranded Aluminum Conductor (SAC) along approximately 7.5 miles.
E-2	Proceeds northwest from Matthews and McLaughlin Roads. Follows Ethanac Road west to Goetz Road. From this point, it proceeds north on Goetz Road to Mapes Road, and then to Sophie Street. It follows Sophie Street north on to Betty Road, then proceeds west on Betty Road to Highway 74 and follows the highway to Ethanac Road. Alternative Route Segment E-2 would consist of approximately 85 LDS poles, and approximately 10 TSP. Alternative Route Segment E-2 would include approximately 131,000 circuit feet of 954 SAC. Existing 12 kV lines would be transferred to new poles along approximately 1 mile of this alternative route segment. No SCE overhead utilities are located on Betty Road, Mapes Road, or Goetz Road (approximately 9 miles).
C-1	Proceeds southwest along the northwest side of Highway 74, from the existing 500 kV transmission ROW to Conard Avenue. Alternative Route Segment C-1 would consist of approximately 120 LDS poles, five TSPs, and 24,000 circuit feet of 954 SAC along approximately 4.5 miles.
C-2	Proceeds southwest along the existing 33 kV and 12 kV lines that are located northwest of Highway 74, for approximately 5.8 miles, turning west until reaching El Toro Road. Alternative Route Segment C-2 would consist of approximately 115 LDS poles, two TSPs, and 31,500 circuit feet of 954 SAC along approximately 6 miles. This portion of the segment would include about 0.5 miles of new construction along the northeast side (upslope) of a dry wash near Chippewa Road.
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. Alternative Route Segment C-3 would consist of approximately 35 LDS poles, five TSPs, and 6,800 circuit feet of 954 SAC along approximately 1.3 miles.
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. Alternative Route Segment C-4 would consist of approximately 29 LDS poles, four TSPs, and 6,300 circuit feet of 954 SAC along approximately 1.2 miles.
C-6	Proceeds west near Nichols Road, crosses I-15, and then back onto Nichols Road for approximately 1 mile to an existing 33 kV line ROW. Alternative Route Segment C-6 would consist of approximately 23 LDS poles, six TSPs, and 6,900 circuit feet of 954 SAC along approximately 1.3 miles.
C-7	Travels along the southeast side of Highway 74. Follows Highway 74 southwest from the existing 500 kV transmission line ROW to Peach Street. Crosses to the northwest side of Highway 74 at Peach Street. Alternative Route Segment C-7 would consist of approximately 37 LDS poles, three TSPs, and 7,400 circuit feet of 954 SAC along approximately 1.4 miles.
W-1	Follows an existing 33 kV line ROW for approximately 4 miles from Nichols Road to Hostettler Road. Alternative Route Segment W-1 would consist of approximately 93 LDS poles, two TSPs, and 18,500 circuit feet of 954 SAC along approximately 3.5 miles.

Table 2.4-2 *(Continued)*: Alternative Route Segments Evaluated

Alternative Route Segment	Description
W-2	Follows I-15 north from Nichols Road to Concordia Ranch Road; travels north through Bureau of Land Management (BLM) land to Big Canyon Drive and Walker Canyon Road; proceeds west along the north side of I-15 to Concordia Ranch Road and Temescal Canyon. Alternative Route Segment W-2 would consist of approximately 110 LDS poles and 21,500 circuit feet of 954 SAC along approximately 4 miles.
W-3	Crosses I-15 on two existing 115 kV TSPs at the Temescal Canyon Road underpass. This segment may require replacing the existing TSPs with different TSPs designed to accommodate lines crossing at different angles. Alternative Route Segment W-3 would consist of approximately 10 LDS poles, two TSPs, and approximately 2,200 circuit feet of 954 SAC along approximately 0.5 miles.
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. Alternative Route Segment W-4 would consist of approximately 70 LDS poles and 13,200 circuit feet of 954 SAC along approximately 2.5 miles.
W-5	Follows the south side of I-15 northwest, from the intersection of Hostettler Road and Desperado Drive, to Temescal Canyon Road, east of the Ivyglen Substation. Alternative Route Segment W-5 would consist of approximately 125 LDS poles and 25,000 circuit feet of 954 SAC along approximately 5 miles.
W-8	Crosses over I-15 a short distance southeast of Indian Truck Trail, near an existing 12 kV line crossing. Alternative Route Segment W-8 would consist of approximately five TSPs and 1,000 circuit feet of 954 SAC along approximately 0.2 miles.
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. Alternative Route Segment W-10 would consist of approximately 53 LDS poles, ten TSPs, and 13,200 circuit feet of 954 SAC along approximately 2.5 miles.

SOURCE: SCE 2006

2.4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

SCE examined a total of 15 segments (excluding the six segments eliminated from further consideration described in Section 2.4.3 above and shown in Figure 2.4-1) for their potential environmental impacts. Table 2.4-3 presents in summary form the level of potential environmental impacts for each of the 15 segments and for each of the 16 environmental parameters evaluated in the PEA. The shaded columns represent the segments comprising the Proposed Route.

Eastern Region

There are two potential route segments in the Eastern Region. Each of the two segments provide complete, alternative paths from the Valley Substation to a common ending point on Highway 74, although Segment E-2 is approximately 1.5 miles longer than Segment E-1. While the two segments would generate similar levels of impact across most of the parameters, Segment E-2 would have significant and unavoidable impacts associated with aesthetics as discussed in Chapter 4.2 of this PEA. Accordingly, Segment E-1 is the preferred segment in the Eastern Region.

Table 2.4-3: Summary of Impacts and Significance

Line Segment / Environmental Parameter	E-1	E-2	C-1	C-2	C-3	C-4	C-6	C-7	W-1	W-2	W-3	W-4	W-5	W-8	W-10
Aesthetics	◒	●	◕	◕	◒	◒	◕	●	◒	●	◒	◒	●	◕	◕
Agricultural Resources	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	○	◔	◔	○	◔
Air Quality	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒
Biological Resources	◕	◕	◕	◕	◔	◕	◕	◕	◕	◕	◔	◕	◕	◕	◕
Cultural Resources	◕	◕	◕	◕	○	◕	◕	◕	◕	◕	◕	◕	◕	○	○
Geology, Soils, and Seismicity	◔	◔	◔	◔	◔	◔	◔	◔	◕	◕	◕	◕	◕	◕	◕
Hazards/Hazardous Materials	◕	◔	◔	○	◔	◔	◕	◔	◕	○	◕	◕	◔	○	◕
Hydrology and Water Quality	◔	◕	◔	○	◔	◔	◕	○	◔	◔	◕	◕	○	○	◕
Land Use and Planning	○	◔	○	○	◔	◔	◔	○	◔	○	○	◕	●	◔	◔
Mineral	◔	◔	◔	◔	◔	◕	◕	◔	◔	◔	◔	◔	◔	◔	◔
Noise	◒	◔	◒	◒	◒	◒	◔	◒	◔	◔	◔	◔	◔	◔	◔
Population and Housing	○	○	○	◔	○	○	○	○	○	○	○	○	○	○	○
Public Services	○	◔	○	○	◔	○	○	○	○	○	○	○	○	○	○
Recreation	○	◔	○	○	○	○	○	◔	○	○	○	○	○	○	○
Transportation and Traffic	◒	◒	◒	◔	◔	◔	◒	◒	◔	◔	◒	◔	◔	◒	◔
Utilities and Service Systems	○	○	○	◔	◔	○	◔	○	○	○	○	◔	◔	○	○

FOOTNOTE: Highlighted columns are route segments comprising the Proposed Route.

KEY:

- ● = Potentially significant and not mitigable (to less than significant)
- ◕ = Potentially significant but mitigable (to less than significant)
- ◒ = Temporarily potentially significant but mitigable (to less than significant)
- ◔ = Not potentially significant
- ○ = No impact

SOURCE: MHA 2006

Central Region

There are a total of seven potential segments in the Central Region. Unlike the two Eastern Region segments, the seven segments in the Central Region do not provide seven complete alternative paths. Rather, the seven segments provide a number of paths comprised of several of the segments. Segments C-1, C-2, and C-7 are the segments that begin where the Eastern Region ends. The alternatives for Segments C-1 and C-7 include adding Segments C-3, C-4, and C-6. Segment C-2 requires adding a combination of Segments C-4 and C-6.

These combinations of segments to cross the Central Region result in three possible paths. Segment C-7 would generate significant and unavoidable impacts associated with aesthetics as discussed in Chapter 4.2 of this PEA. Therefore, this segment and the combinations of Segments C-3, C-4, and C-6 have greater impacts than combinations that include C-1 or C-2. That leaves two viable alternatives: alternative one would consist of C-1, C-3, C-4, and C-6 and alternative two would consist of C-2, C-4, and C-6. The environmental impacts associated with either alternative path would be comparable, but the alternative path utilizing Segments C-2, C-4, and C-6 presents more access and maintenance challenges and potential system disruptions. Accordingly, Segments C-1, C-3, C-4, and C-6 are the preferred segments in the Central Region.

Western Region

The Western Region is comprised of eight segments. Similar to the Central Region, the segments are not distinct, complete paths from one side of the region to the other, but rather, a combination of segments are required to move from the end of the Central Region to the Ivyglen Substation.

The elimination of Segments W-7, W-9, and W-12 due to construction difficulties, as described above in section 2.4.3, also effectively eliminates Segments W-6 and W-11 from further consideration. Absent Segment W-9, Segment W-6 has no connection at its western end and Segment W-11 has no connection at its eastern end.

Of the remaining viable Western Region segments, there are three viable paths: (1) Segments W-1, W-4, W-8, and W-10; (2) W-2, W-3, W-4, W-8, and W-10; or (3) W-1, W-4, and W-5. The combination of Segments W-2, W-3, W-4, W-8, and W-10 would require replacing the existing crossing of I-15, resulting in removing the Valley-Elsinore-Ivyglen 115 kV line from service. Segments W-1, W-4, and W-5 would generate significant land use conflicts as discussed in Chapter 4.10 of this PEA. The remaining combination of Segments W-1, W-4, W-8, and W-10 would generate the least number of significant effects, and are therefore, they are the preferred segments for the Western Region.

2.4.6 RECOMMENDATION - PROPOSED ROUTE ALTERNATIVE

Nine discreet alternative route segments, totaling approximately 25 miles, comprise the Proposed Route for the new Valley-Ivyglen 115 kV Subtransmission Line. From east to west, these segments are designated Segments E-1, C-1, C-3, C-4, C-6, W-1, W-4, W-8, and W-10, as described above in Table 2.4-2. Segment E-1 would begin at the Valley Substation, while Segment W-10 would terminate at the Ivyglen Substation.

Taking into account environmental impacts, operational factors, and reliability considerations, Segments E-1, C-1, C-3, C-4, C-6, W-1, W-4, W-8, and W-10 were selected as the Proposed Route. The Proposed Route is carried forward in this PEA and defined as part of the Proposed Project discussed in the Project Description (Chapter 3).

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3.0 Project Description

3: PROJECT DESCRIPTION

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 (Proposed Project). The Proposed Project also includes constructing improvements at the Valley and Ivyglen substations to accommodate the Proposed Subtransmission Line, installation of a telecommunications line, transfer of distribution facilities, and stockpiling and/or disposal of old electrical distribution line poles. The project consists of the three 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
- **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

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 Electrical Needs Area, and the Proposed Subtransmission Line Route, as defined below.

> The **Project Study Area** is the 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 Proposed Project is located. The alternative route segments evaluated in this PEA are also located within the Project Study Area.
>
> The **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. The Electrical Needs Area is served by five Valley South system substations: Centex, Dryden, Glen Ivy, Elsinore, and Ivyglen. These areas benefit from the Proposed Project.
>
> The **Proposed 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.

Figure 3.2-1 delineates the Project Study Area, the Electrical Needs Area, and the Proposed Subtransmission Line Route.

Subtransmission Line

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

Valley Substation

The 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

The 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).

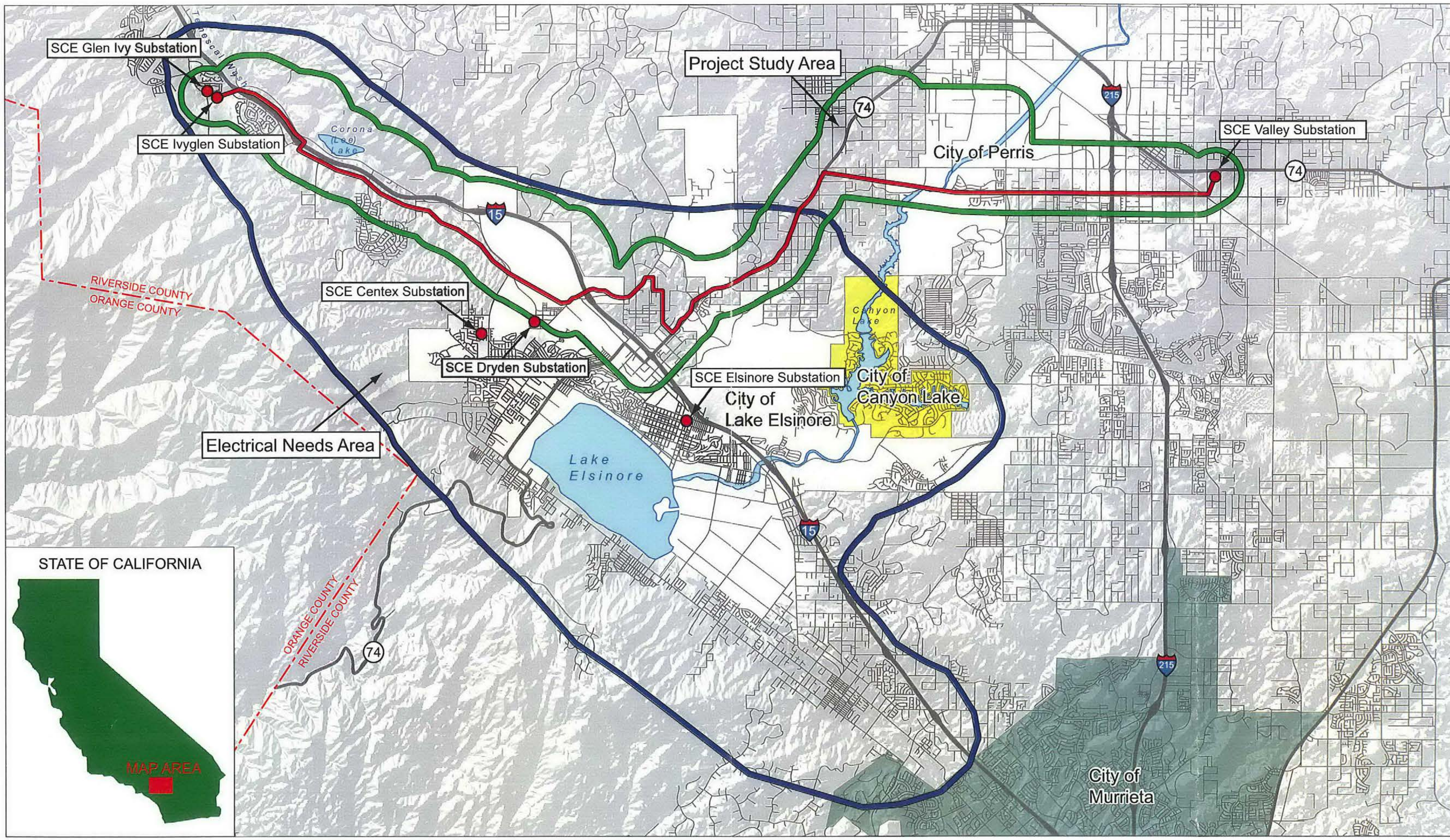
3.3 Proposed Project Description

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).

Figure 3.2-1: Project Region and Study Area



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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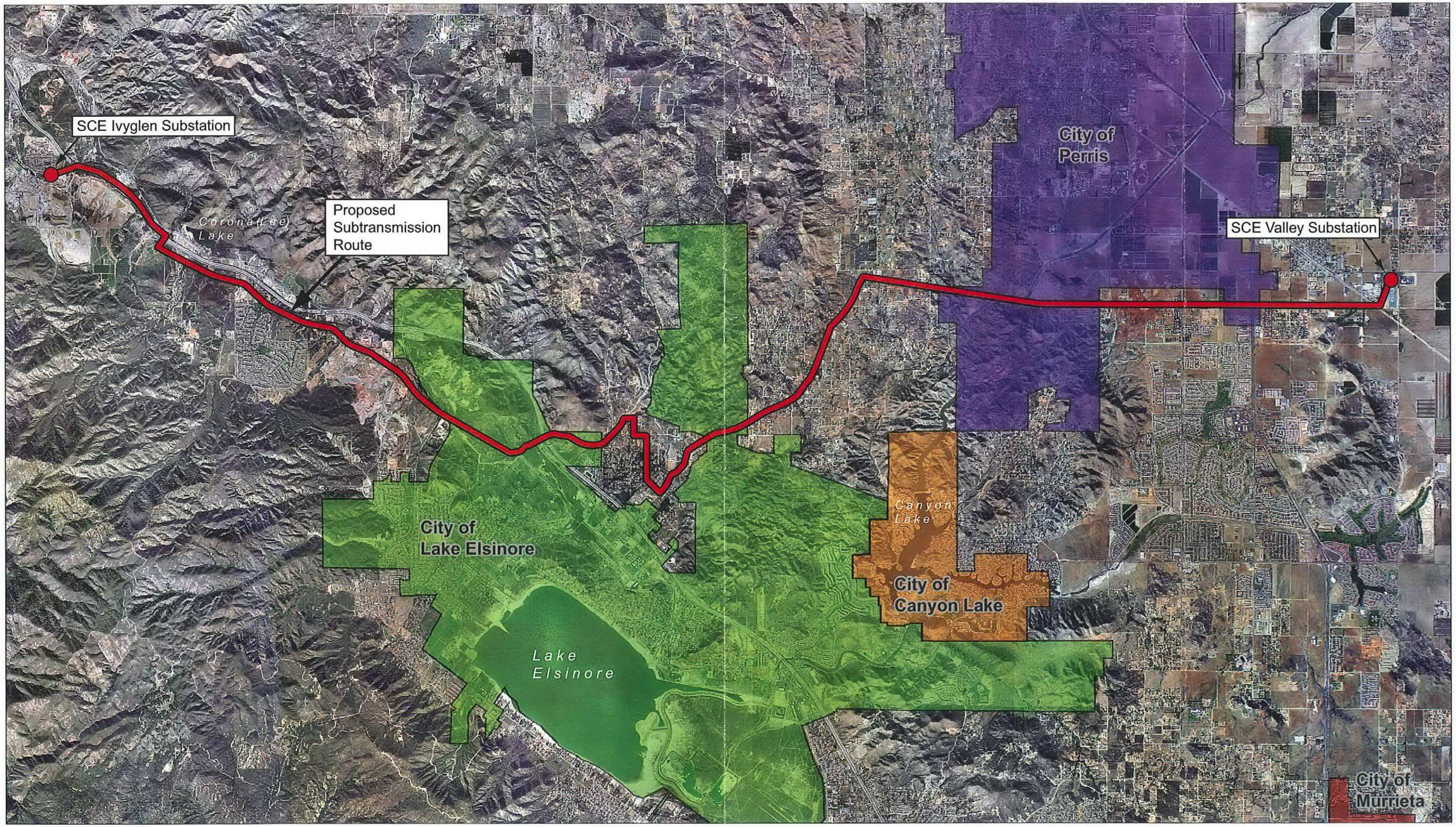
Figure 3.3-1: Proposed Subtransmission Project Route



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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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).

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 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 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.

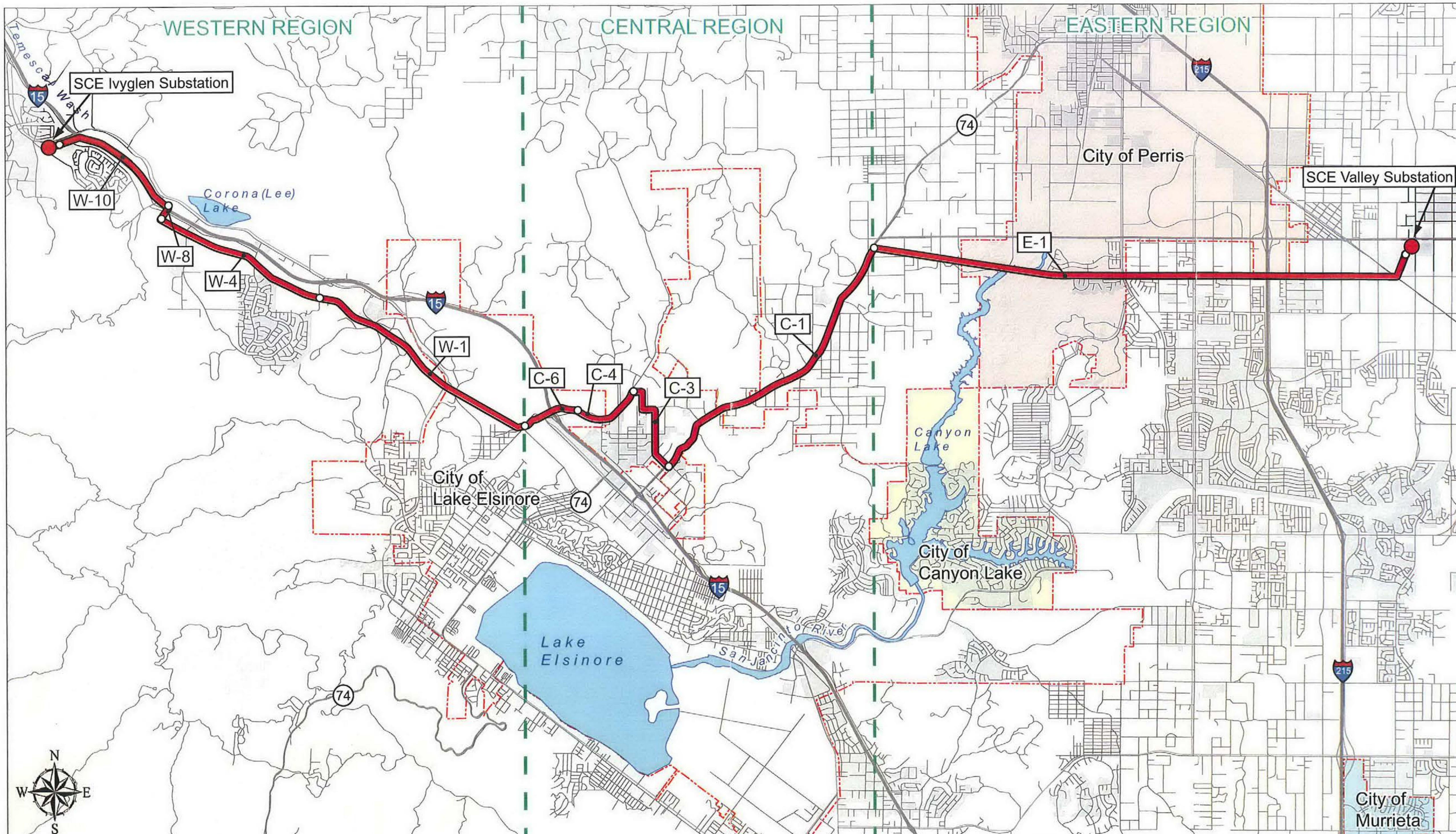
The specific height and spacing of poles along the length of the Proposed Subtransmission Line Route would be determined upon final engineering and constructed in compliance with CPUC General Order (GO) 95, and other factors including, but not limited to the items listed below.

- 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.

Figure 3.3-2: Proposed Subtransmission Route Segments



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

LEGEND

Proposed Route Segment	Substation	Water	City of Canyon Lake
Interstate Highway	Road	Urban Area	City of Perris
State Route	City Boundary	City of Lake Elsinore	City of Murrieta

0 0.5 1 2 3 4 Miles

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Figure 3.3-3 Proposed Subtransmission Route Segments

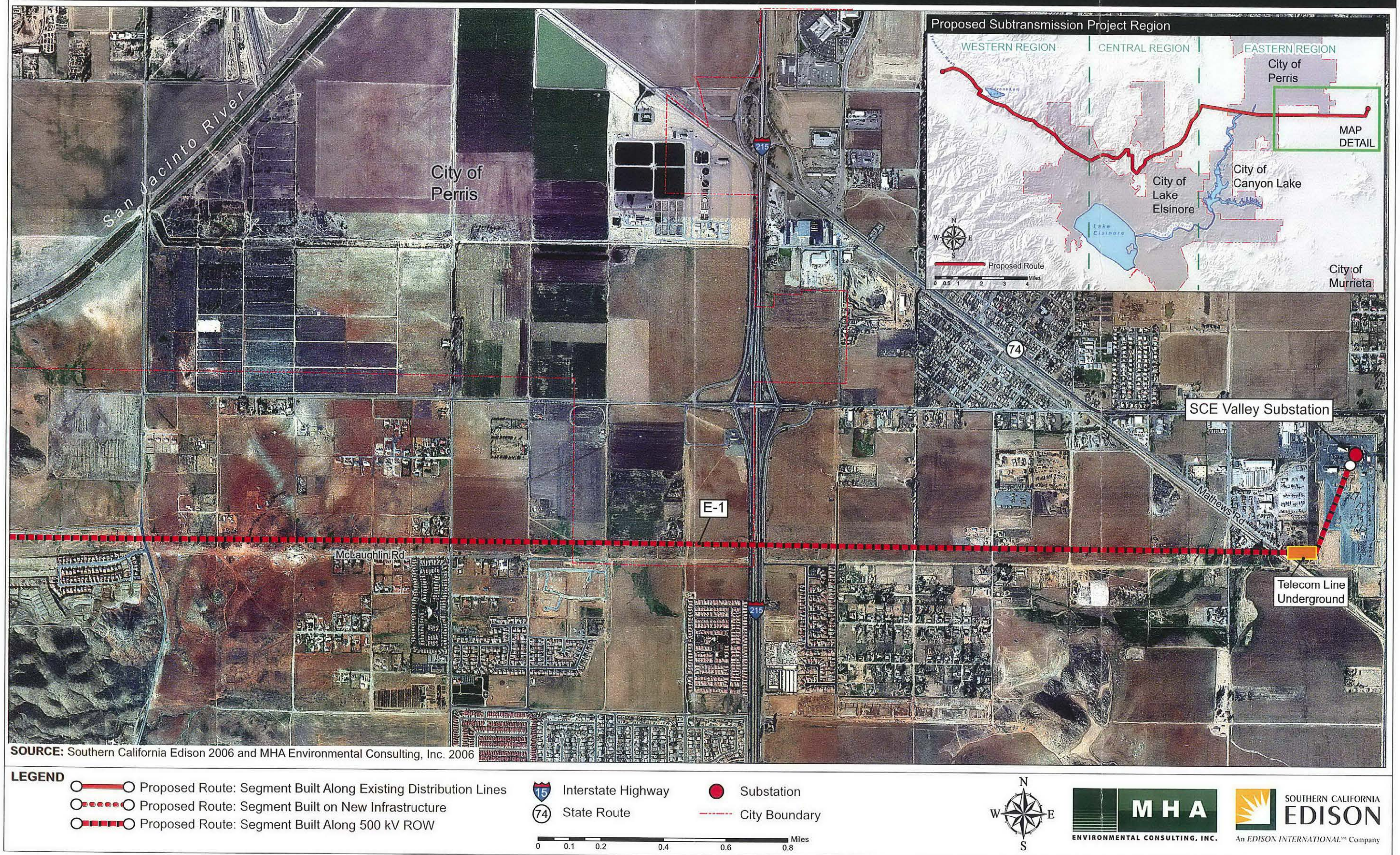

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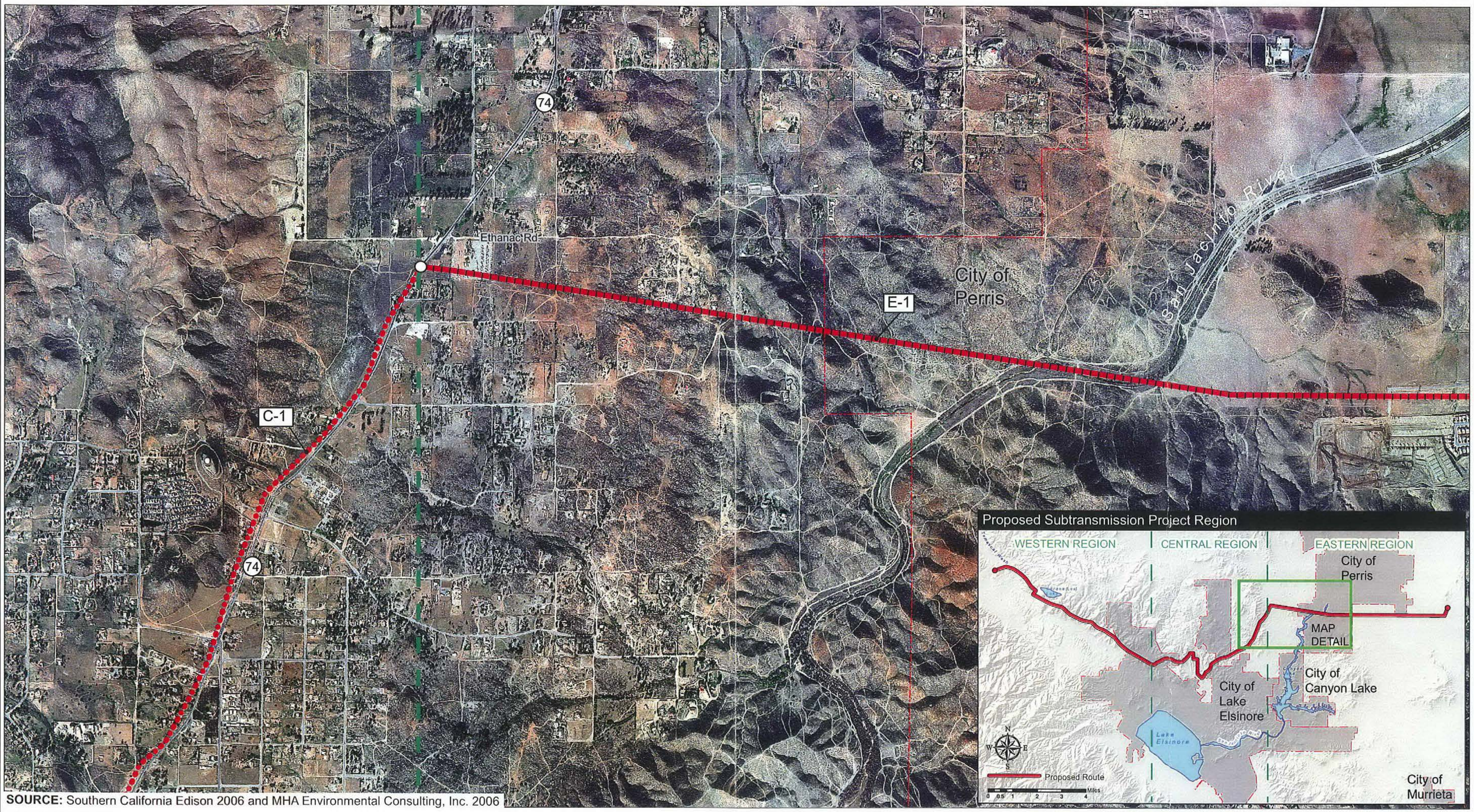
Figure 3.3-4: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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
- Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

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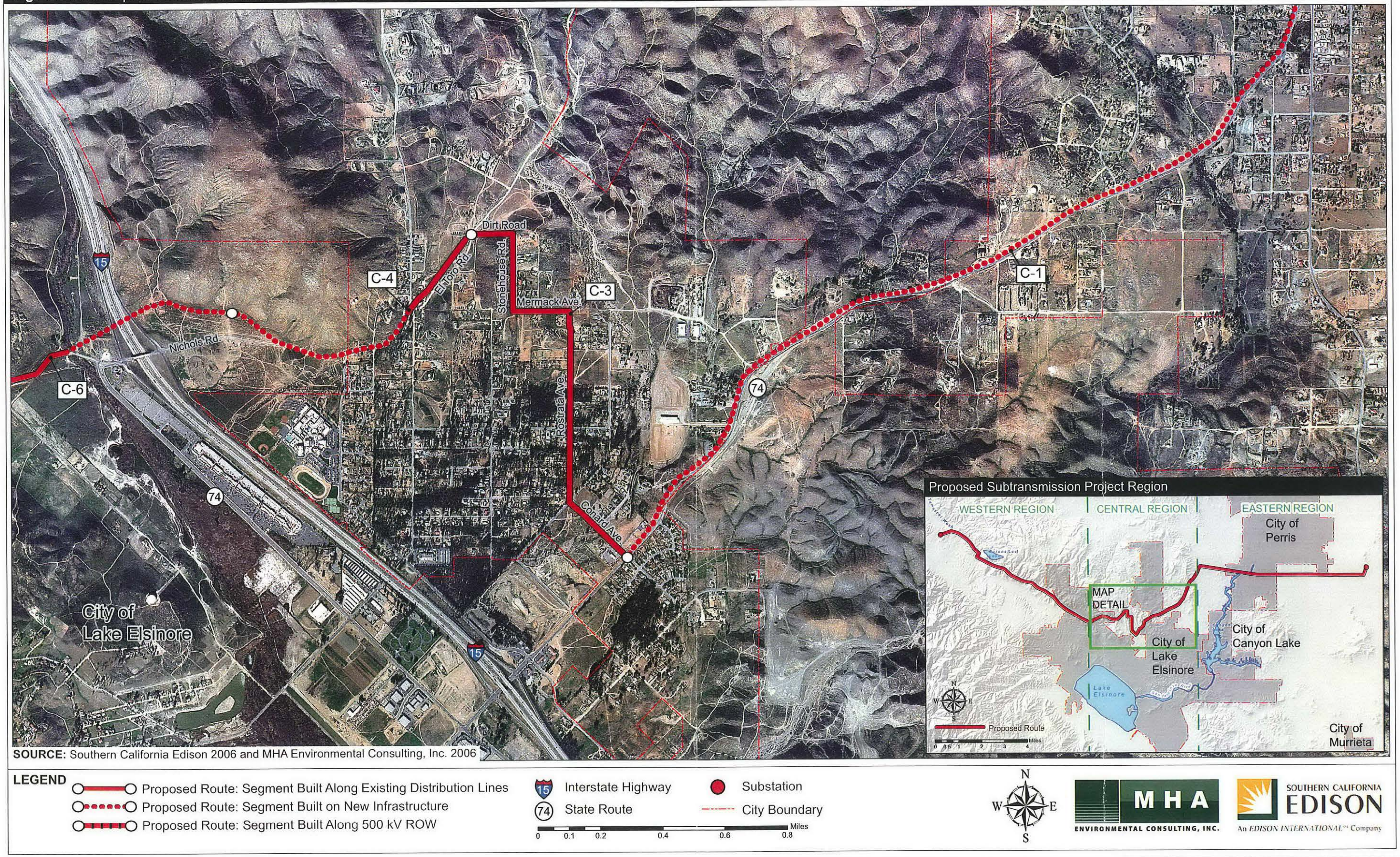
Figure 3.3-5: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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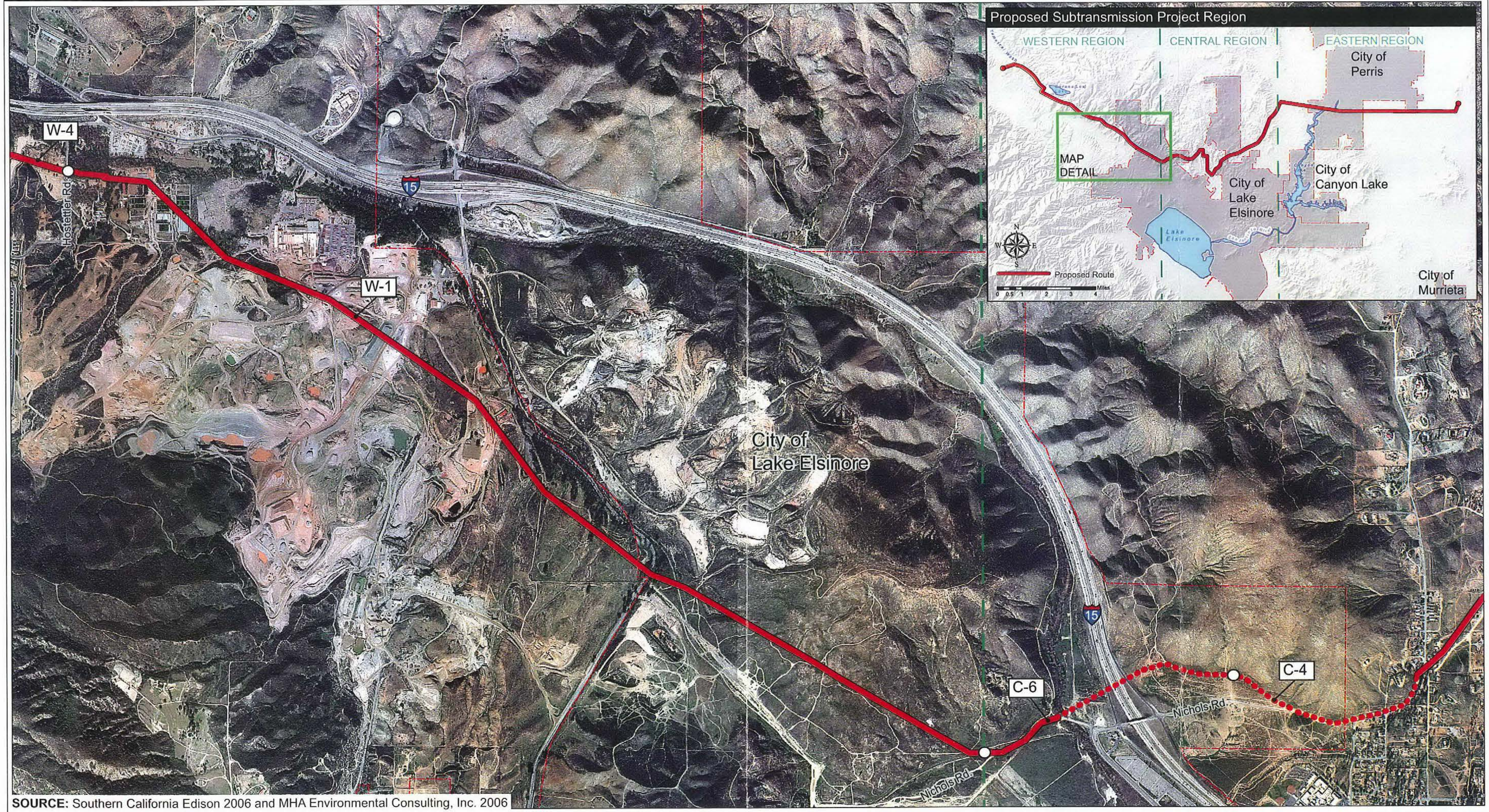
Figure 3.3-6: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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
- Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

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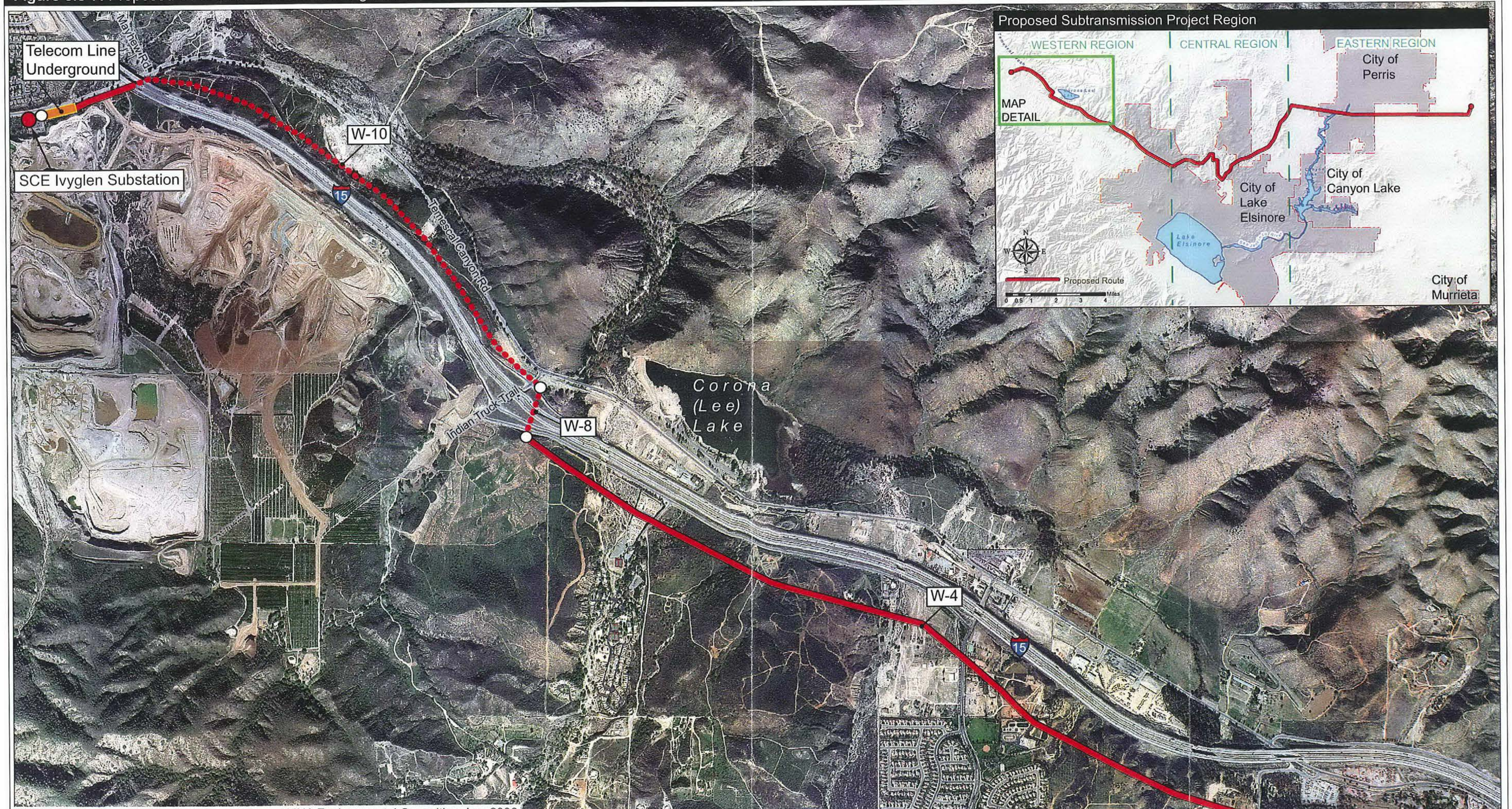
Figure 3.3-7: Proposed Subtransmission Route Segments



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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
- Substation
- City Boundary

0 0.1 0.2 0.4 0.6 0.8 Miles

N W E S

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Table 3.3-1: Proposed 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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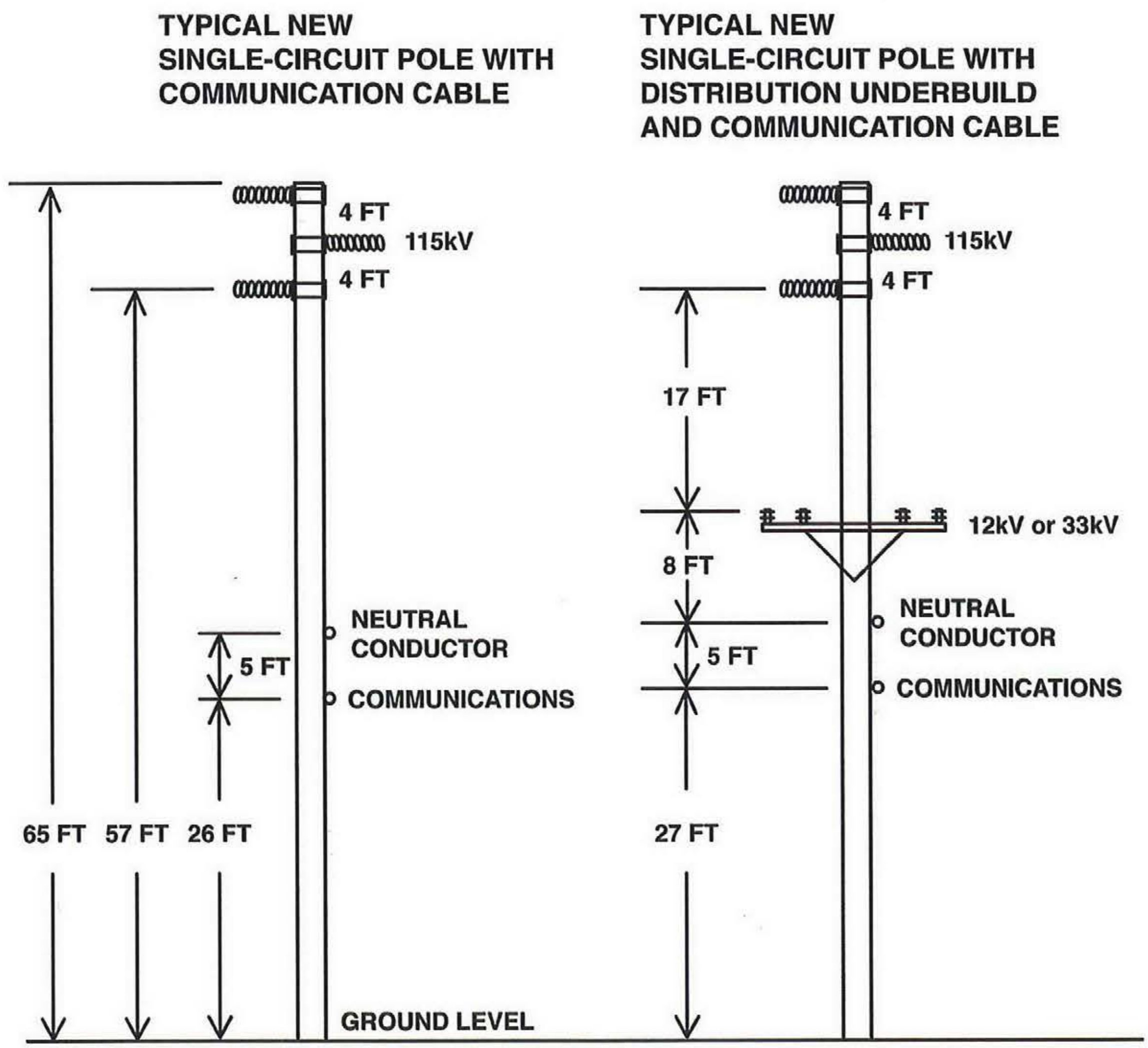
Figure 3.3-8: Typical New LDS Poles



SOURCE: SCE 2006

SCALE: Not to scale

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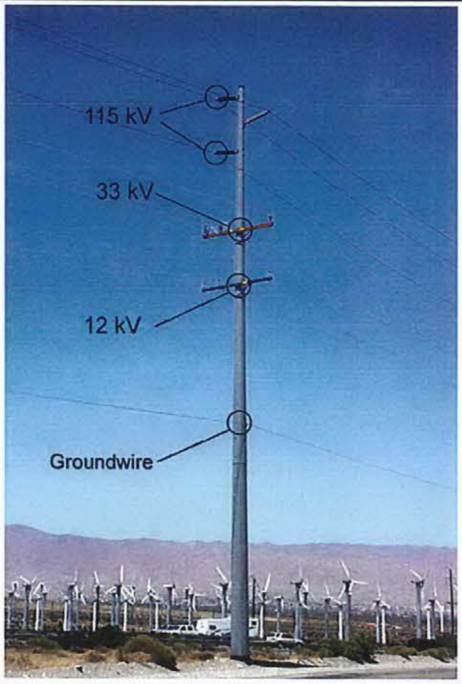
Figure 3.3-9: Typical LDS for 115 kV Subtransmission with Distribution Lines



SOURCE: SCE 2006 and MHA 2006

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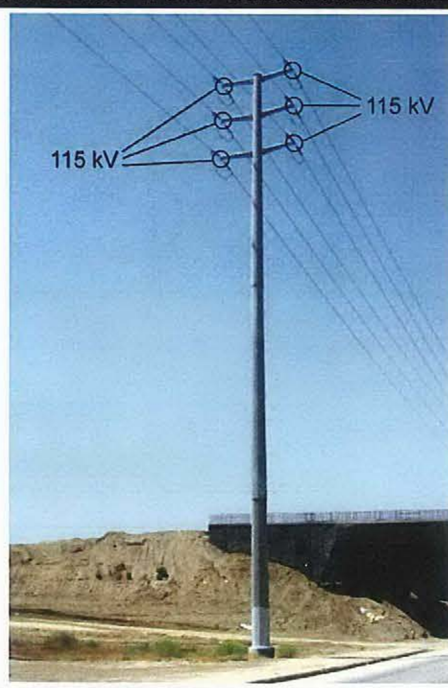
Figure 3.3-10: Typical TSP with Double 115 kV Subtransmission Lines



SOURCE: SCE 2006 and MHA 2006

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Roads

Construction and maintenance of the Proposed Subtransmission Line would require access to each of the planned pole locations. Public roads and rights-of-way 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 Project.

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 were set in place, bore spoils (material from holes drilled) would be used to back fill the hole. If the bore spoils were 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.

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 Project. Table 3.3-2 identifies the estimated number of personnel and equipment needed for construction of 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 recompacted 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 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.

Table 3.3-2: 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

Operation, Inspection, and Maintenance

Normal operation of the Proposed 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.

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 was 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.

3.3.2 SUBSTATIONS

Substation Improvements

The Proposed Subtransmission Line would require the installation, operation, and maintenance of new equipment at both the Valley and Ivyglen substations.

Valley Substation

The 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

The 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.

Table 3.3-3: Proposed 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

Construction

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.

Operation and Maintenance

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

Substation Construction Schedule

The substation construction 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 3.3-4 identifies the number of personnel and equipment needed for construction of the substation improvements.

3.3.3 TELECOMMUNICATIONS SYSTEM

A telecommunication system is required for communication and monitoring of the Proposed Subtransmission Line and associated substation improvements. The Proposed Project would require improvements to existing 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. In addition, new telecommunications equipment would be installed within both the Valley and Ivyglen substations to facilitate new interconnections.

The personnel and equipment needed for the telecommunications construction at the Valley and Ivyglen substations are listed in Table 3.3-5. Table 3.3-5 also lists the telecommunications construction duration.

Telecommunications Line

A new telecommunications line 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.

- 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)

Approximately 600 feet of underground fiber optic cable would be installed for the Proposed Project. All new fiber optic cable would be installed in new underground conduits.

Telecommunications Construction

Substation Equipment Installation

At the 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

Table 3.3-4: Substation 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

Table 3.3-5: 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

be used for telecommunications equipment installation. Communications equipment installation would take approximately 10 days to complete.

At the 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.

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. 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)

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.

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.

Telecommunications Construction Schedule

The telecommunications construction schedule 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 3.3-4.

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.

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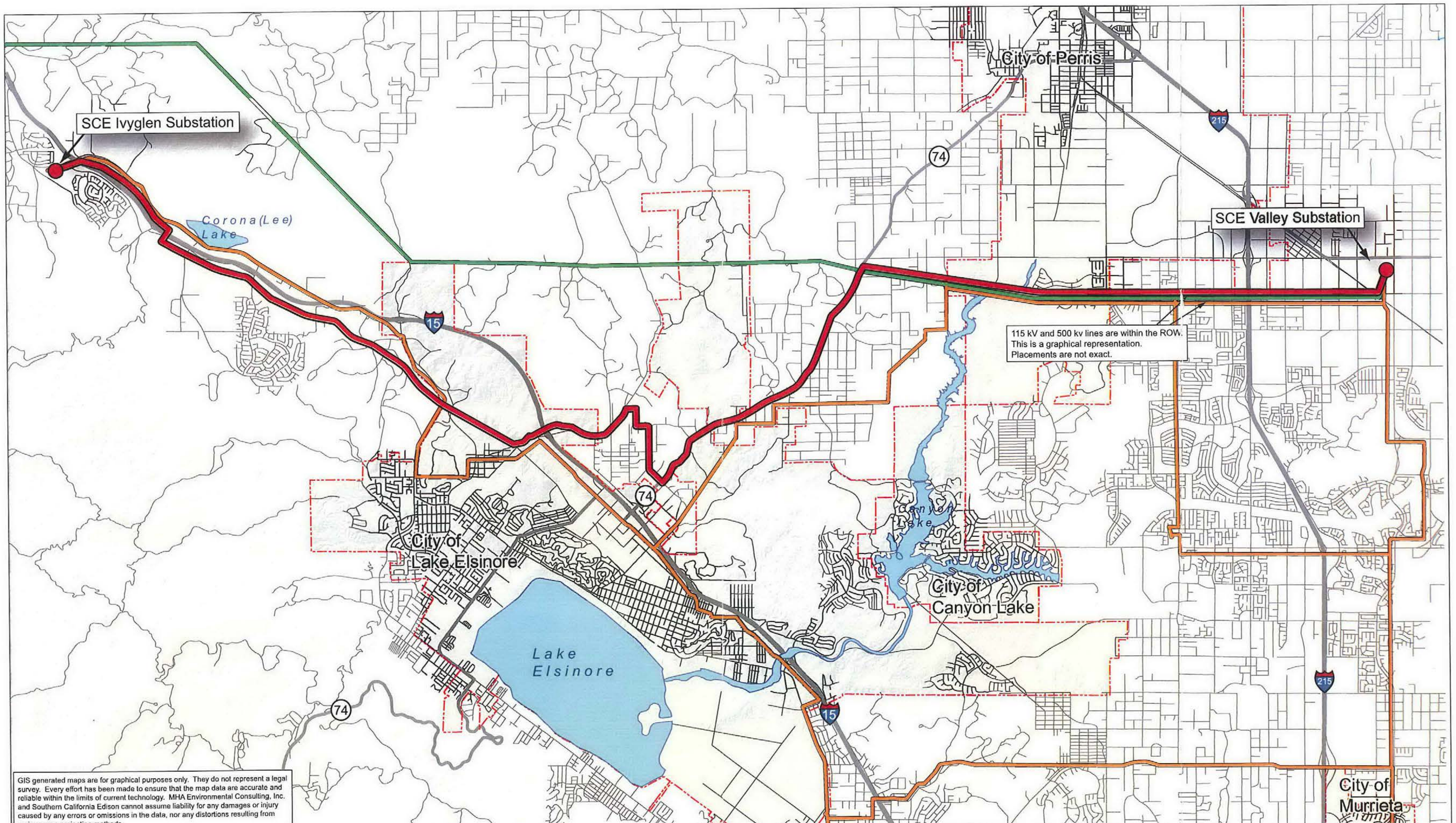
Figure 3.4-1: Transmission Lines and 115kV Subtransmission Lines Near the Project Study Area



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

- Substation
- Proposed Route
- 500 kV Transmission Line
- 115 kV Subtransmission Line
- Interstate Highway
- State Route
- Road
- City Boundary
- Urban Area
- Water

N W E S

0 0.5 1 2 3 4 Miles

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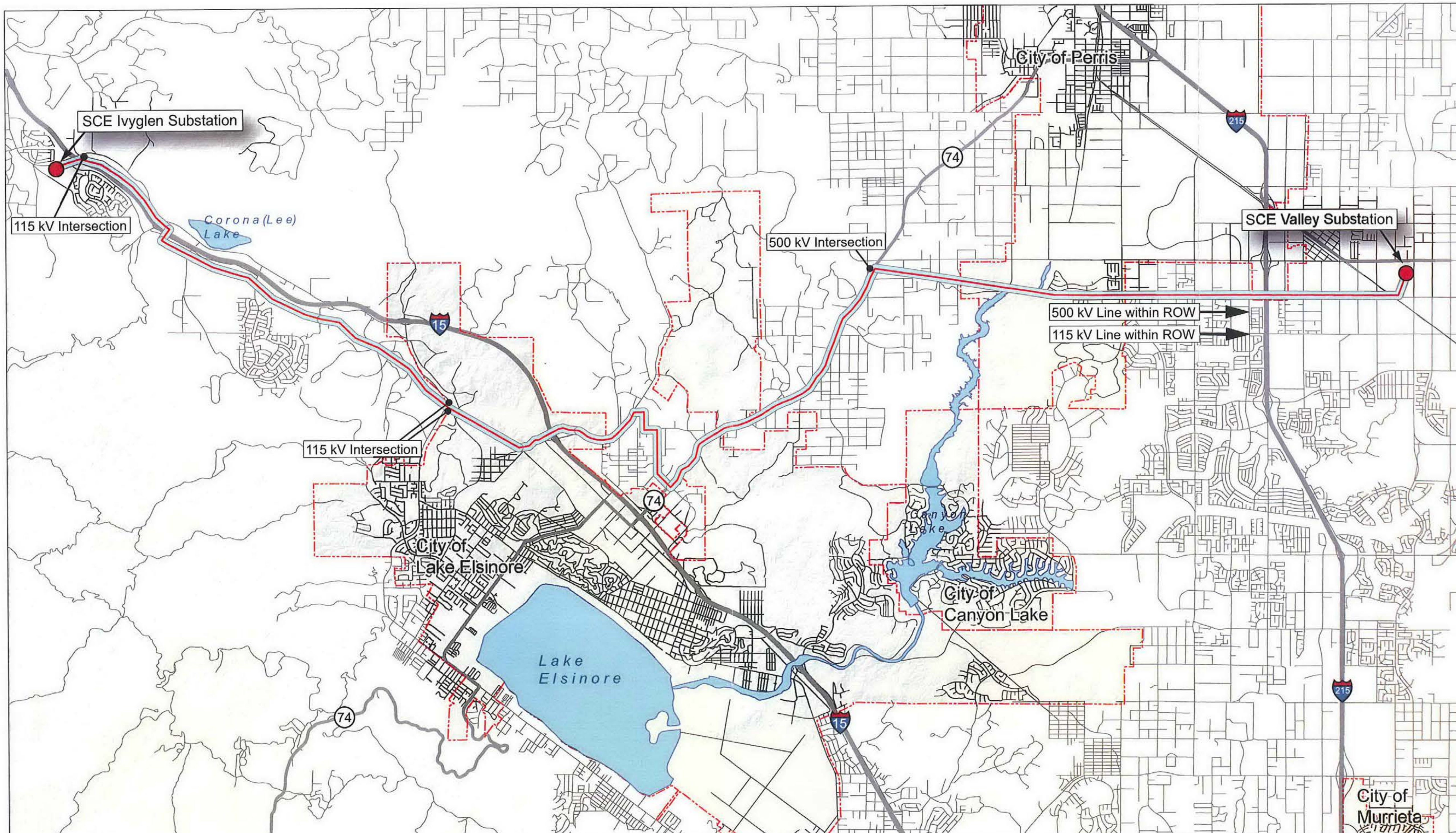
Figure 3.4-2: Transmission Lines and 115kV Subtransmission Lines Along the Proposed Route



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

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4.0 Environmental Impact Assessment

4: ENVIRONMENTAL IMPACT ASSESSMENT

4.1 Introduction

This section describes the potential environmental impacts of the Proposed Project and alternatives. The analysis of each resource category begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125(a) of the CEQA Guidelines) that may be affected by the Proposed Project. The impacts of the Proposed Project are defined as changes to the environmental setting that are attributable to project construction and operation.

Significance criteria, as set forth in the CEQA Environmental Checklist, are identified for each environmental resource area. The significance criteria serve as a benchmark for determining if a project would result in significant adverse environmental impacts when evaluated against the baseline. According to the CEQA Guidelines Section 15382, a significant effect on the environment means "...a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project..." If significant impacts are identified, feasible mitigation measures are identified to eliminate or reduce the impacts to less than significant levels.

CEQA Guidelines Section 15126.4 (a) (3) states that mitigation measures are not required for effects that are not found to be significant. Therefore, where an impact is less than significant, no mitigation measures have been proposed. In addition, compliance with laws, regulations, ordinances, and standards designed to reduce impacts to less than significant levels are not considered mitigation measures under CEQA.

SCE Proposed Measures and Mitigation Measures are summarized in Appendix E.

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4.2 Aesthetic Resources

4.2.1 ENVIRONMENTAL SETTING

The broad characteristic landscapes around the SCE Valley and Ivyglen substations and Project Study Area are illustrated in Figure 4.2-1. The Proposed Subtransmission Line Route passes through three regional landscape settings. These landscape settings and their characteristics are summarized below.

Perris Valley. Perris Valley is composed of distinctive flat topography with a mixture of agricultural, rural residential, and planned residential developments near the urbanizing margins of the City of Perris.

Foothills. The foothills are composed of diverse rolling and foothill topography with a combination of southern oak woodland mixed with coastal sage scrub. Orientation is varied with most views focusing on the foreground with a mountain background. From a variety of vantage points, middleground views overlook Perris Valley and Lake Elsinore. There are numerous small valley areas that are visually contained within the foothills, such as Warm Springs Valley. Uniformly spaced rural residential development is intermixed with areas of undeveloped open space. This area includes the northern portions of the City of Lake Elsinore.

Temescal Canyon. Temescal Canyon is a northwest-trending clearly defined valley that has as its dominant visual features the Canyon's defining slopes, the Temescal Wash, its riparian landscape, and I-15. Hillsides on the east of the wash generally appear as visually intact. The mountain backdrop to the south is visually intact. A wide variety of land developments within the valley are vivid, but not unified with each other. This detracts from the distinctiveness of the area.

Project Study Area

The general landscape settings are further divided, as shown in Figure 4.2-1, into a series of characteristic landscapes around the SCE Valley and Ivyglen substations, and along the Proposed Subtransmission Line Route. Characteristics of these landscapes are summarized in Table 4.2-1. Three visual traits are used to characterize contrast changes: intactness, vividness, and unity[1]. Figure 4.2-2 illustrates the location of photos shown in Table 4.2-2. These photos portray the characteristic landscapes along the Proposed Subtransmission Line Route. Portions of the Proposed Subtransmission Line Route pass through the cities of Perris and Lake Elsinore.

Viewer Sensitivity

Viewer sensitivity is a measure of public concern for changes to scenic quality and is one threshold for evaluating visual impact significance. Viewer activity, view duration, distance away from seen objects (foreground, middleground, background), adjacent land uses, and special planning designations, such as scenic route designation, are used to characterize viewer sensitivity.

Potentially affected viewer groups along the Proposed Subtransmission Line Route would be motorists along Highway 74 and I-15, and adjacent residents. Highway 74 and I-15 are eligible

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[1] **Intactness:** The integrity of visual order in the natural and built landscape, and the extent to which the landscape is free from visual encroachment.
Vividness: The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking and distinctive visual pattern.
Unity: The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements.

State Scenic Highways. Sensitivity levels would be considered potentially moderate to high from the perspectives of residents and motorists along these routes.

Methodology

The visual analysis was based on:

- Field observations of the Project Study Area conducted in July and November 2006
- Ground-level photographs
- Field review and photographs of comparable nearby projects utilizing the same general pole design as the Proposed Project

The visual assessment employs a line-of-sight analysis to consider the net visual presence and contrast that would be brought about by the Proposed Project. The approach analyzes the amount of contrast that would be created by the Proposed Project within the basic visual elements of the characteristic landscape. Changes in form, line, color, texture, and scale that would likely have long-term effects were evaluated and characterized. Long-term is defined as longer than five years. Three visual traits are used to characterize contrast changes: intactness, vividness, and unity.

4.2.2 REGULATIONS, PLANS, AND STANDARDS

Federal

There are no federal regulations regarding aesthetics and visual resources related to the Proposed Project.

State

Other than CEQA, there are no state regulations regarding aesthetic resources related to the Proposed Project or affecting the Project Study Area. Highway 74 and I-15 are eligible State Scenic Highways with the Project Study Area, but they have not been designated as such.

Regional and Local

While SCE intends to develop facility designs that are compatible with local zoning, the Proposed Project is exempt from local land use and zoning regulations and permitting.

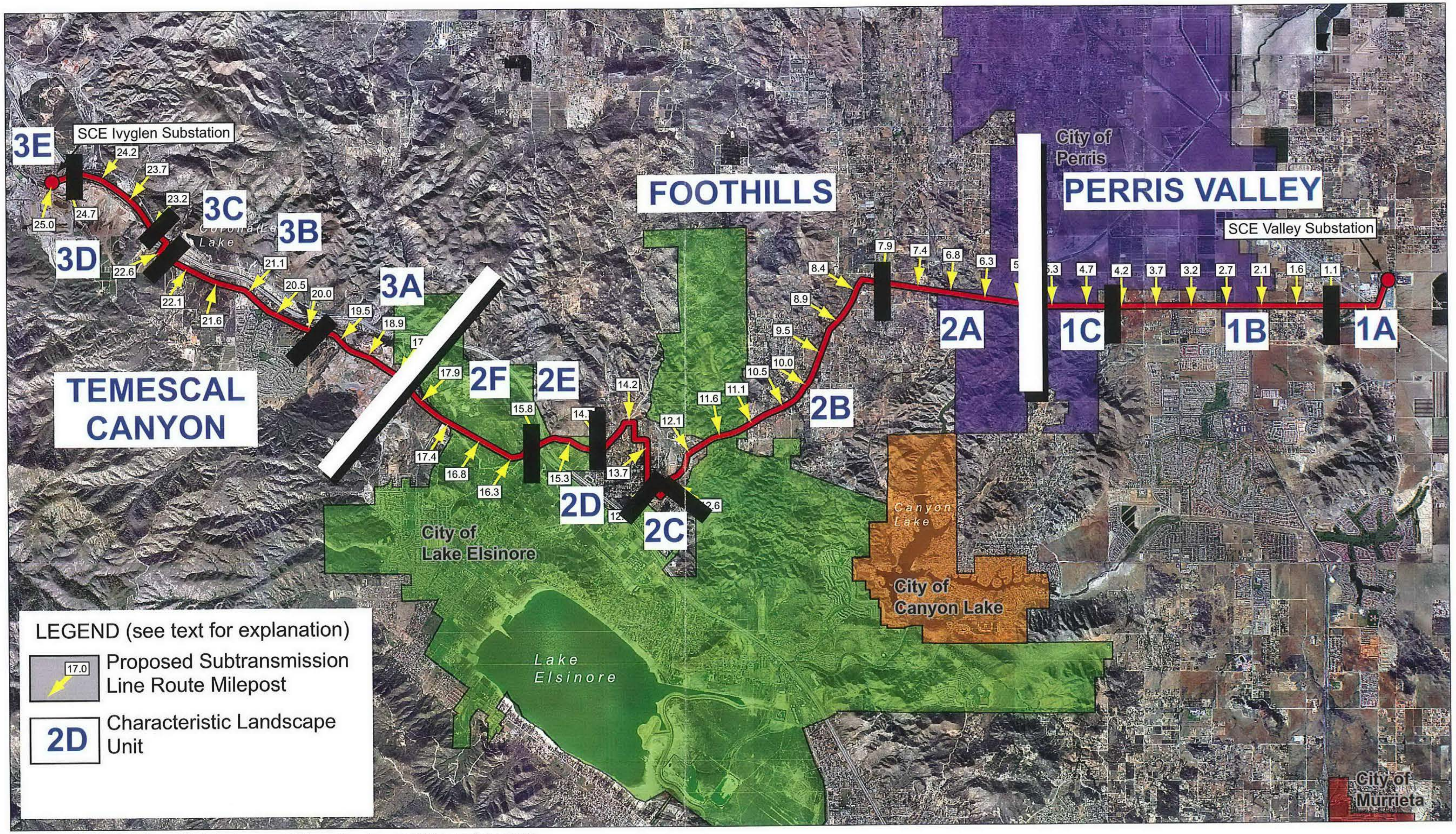
County of Riverside

The Proposed Subtransmission Line Route is located primarily within unincorporated Riverside County. The Land Use Element of the Riverside County General Plan (County of Riverside 2003) includes policies to preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public (Policy LU 13.1). The Circulation Element identifies I-15 (Corona Freeway) and Highway 74 as eligible State and County scenic highway corridors.

Land Use Element

LU 13.1: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.

Figure 4.2-1: Proposed Subtransmission Project Route Mileage and Characteristic Landscapes (see Table 4.2-1)



SOURCE: Southern California Edison, MHA Environmental Consulting, Inc. and 2M Associates 2006

LEGEND

- Proposed Route
- Substation
- 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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Table 4.2-1: Characteristic Landscapes (see also Figure 4.2-1)		
Segment Map Key	**Approx. Boundaries**	**Characteristic Landscape**
Perris Valley		
1A	SCE Valley Substation Mile 0.0 to Mile 1.2	Dominant Visual Features: SCE Valley Substation; power plant (under construction); BSNF railroad tracks; transmission line route Intactness: high - area is visually dominated by the SCE Valley Substation and the nearby power plant; natural characteristics are not present or subordinate to the industrial features Vividness: high - the scale of the SCE Valley Substation and nearby power plant, the area is highly vivid Unity: low - the substation consists of visually unified industrial elements but in combination with remnant agriculture/rural residences and the various industrial facilities the area is low in overall unity
1B	Mile 0.1 to Mile 4.4 (Goetz Road)	Dominant Visual Features: transmission line route; I-215 (Escondido Freeway); housing Intactness: moderate - the level natural landscape and low structures of surrounding rural residences and residential developments are punctuated by the transmission line route Vividness: moderate - the transmission line route and related facilities contrast with level landscape and surrounding uses is moderately vivid Unity: low - the scale of the transmission line route and related facilities is not unified with the scale of surrounding land uses
1C	Mile 4.4 (Goetz Road) to Mile 5.3	Dominant Visual Features: rolling topography; transmission line route; planned unit development Intactness: low - the natural landscape is visually subordinate to new residential development and transmission line route facilities Vividness: moderate - the transmission line route and related facilities contrast with surrounding residences Unity: low - the scale of the transmission line route and related facilities is not unified with the scale of surrounding residential land uses
Foothills		
2A	Mile 5.3 to Mile 7.6	Dominant Visual Features: transmission line route; hills and rolling topography; coastal sage scrub Intactness: low - natural topography and vegetation are highly visible but are contrasted with transmission line facilities, rural residences, numerous off-highway vehicle roads, and random trash dumps Vividness: low - due to variety of improvements with no distinctive elements Unity: low - due to the visibility of highly varied rural residential improvements, highway commercial establishments, and utility poles
2B	Mile 7.6 to Mile 12.6	Dominant Visual Features: Highway 74; rural and urban residential development; rolling topography with oaks and coastal sage scrub; scattered highway commercial Intactness: moderate to low - natural topography and vegetation are highly visible but are contrasted by rural residential and highway commercial uses Vividness: low - a variety of improvements exist with no distinctive elements Unity: moderate - scale and density of improvements are consistent within the natural landscape

Table 4.2-1 *(Continued)*: Characteristic Landscapes (see also Figure 4.2-1)		
Segment Map Key	**Approx. Boundaries**	**Characteristic Landscape**
2C	Mile 12.6 to Mile 13.0	Dominant Visual Features: Highway 74; sloping topography; mountain backdrop; urban residences; scattered highway commercial, utility lines Intactness: low - natural characteristics are subordinate to a variety of different residential and commercial developments Vividness: moderate - though there are highly varied rural residential improvements there are with no distinctive elements Unity: moderate - scale and density of improvements are consistent within the natural landscape
2D	Mile 13.0 to Mile 14.7	Dominant Visual Features: rolling topography; mountain backdrop; rural residences Intactness: low - natural characteristics are subordinate to a variety of different rural residential developments Vividness: moderate - though there are highly varied rural residential improvements there are with no distinctive elements Unity: moderate - scale and density of improvements are consistent within the natural landscape
2E	Mile 14.7 to Mile 15.8	Dominant Visual Features: I-15 (Corona Freeway); Nichols Road; rolling topography; mountain backdrop Intactness: moderate to high - natural characteristics generally dominate with the exception of the road system Vividness: low - other than relatively undisturbed hillsides, there are no distinctive elements present Unity: moderate to high - scale of highway and road improvements is consistent with the natural landscape and is subordinate to it
2F	Mile 15.7 to Mile 18.2	Dominant Visual Features: rolling topography; mountain backdrop; new residential development Intactness: low to moderate - natural characteristics are readily evident with the exception of areas now being developed Vividness: low to moderate - grading associated with residential development under construction contrasts with the natural landscape Unity: moderate - scale and density of improvements equal to that of the natural setting
Temescal Canyon		
3A	Mile 18.2 to Mile 19.7	Dominant Visual Features: rolling topography; mountain backdrop; new residential development Intactness: low to moderate - natural characteristics are readily evident with the exception of areas now being developed Vividness: low to moderate - grading associated with residential development under construction contrasts with the natural landscape Unity: moderate - scale and density of improvements equal to that of the natural setting

Table 4.2-1 *(Continued)*: Characteristic Landscapes (see also Figure 4.2-1)

Segment Map Key	Approx. Boundaries	Characteristic Landscape
3B	Mile 19.7 to Mile 22.4	Dominant Visual Features: I-15 (Corona Freeway); urban residential development; Corona Lake with hillside advertising; hillside backdrop Intactness: moderate - natural topography and vegetation are evident but foreground modifications in the form of roads, utilities, residential improvements, commercial developments, and advertising modify the natural character Vividness: moderate to high - presence of water at Corona Lake, riparian vegetation along wash, and undeveloped hillsides to the east are distinctive within the context of the overall canyon Unity: moderate - scale and density of improvements equal to that of the natural setting but forms and colors are highly varied; presence of water at Corona Lake is distinctive within the context of the overall canyon
3C	Mile 22.4 to Mile 22.7	Dominant Visual Features: I-15 (Corona Freeway) and Indian Truck Trail interchange; Corona Lake with hillside advertising; natural topography and vegetation Intactness: moderate – highway signs and interchange dominate the natural topography and vegetation Vividness: moderate - wash and related vegetation is distinctive within the context of the overall canyon Unity: low - scale and density of improvements subordinate to that of the natural setting
3D	Mile 22.7 to Mile 24.7	Dominant Visual Features: I-15 (Corona Freeway); open grasslands; hillside backdrop Intactness: high – views to natural wash and vegetation disrupted only by undeveloped hills Vividness: moderate - presence of water at Corona Lake is distinctive within the context of the overall canyon Unity: moderate to high – foreground dominated by the natural setting and mountain backdrop; scale of improvements subordinate to the overall natural setting
3E	Mile 24.7 to Mile 25.0 Ivyglen Substation	Dominant Visual Features: Temescal Canyon Road; Ivyglen Substation Intactness: moderate to low - extent of improvements minor within the context of the natural setting with the exception of the Ivyglen Substation that dominates the immediate area Vividness: moderate - I-15 and the Ivyglen Substation though not distinct, do contrast with the natural landscape and are readily visible Unity: moderate to low - scale and density of improvements equal to that of the natural setting

LU 13.3: Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.

LU 13.5: Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.

Circulation Element

C 25.2: Locate new and relocated utilities underground when possible. All remaining utilities shall be located or screened in a manner that minimizes their visibility by the public. (AI 32)

City of Lake Elsinore

Existing general plan policies do not address scenic resources.

City of Perris

The City of Perris General Plan contains objectives and policies in the Open Space/Conservation Element addressing scenic highways. The Proposed Subtransmission Line Route is not seen from any scenic highways within the City of Perris, and therefore these policies are not relevant.

4.2.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
- Substantially degrade the existing visual character or quality of the study area and its surroundings
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

4.2.4 IMPACT ANALYSIS

Impact Summary

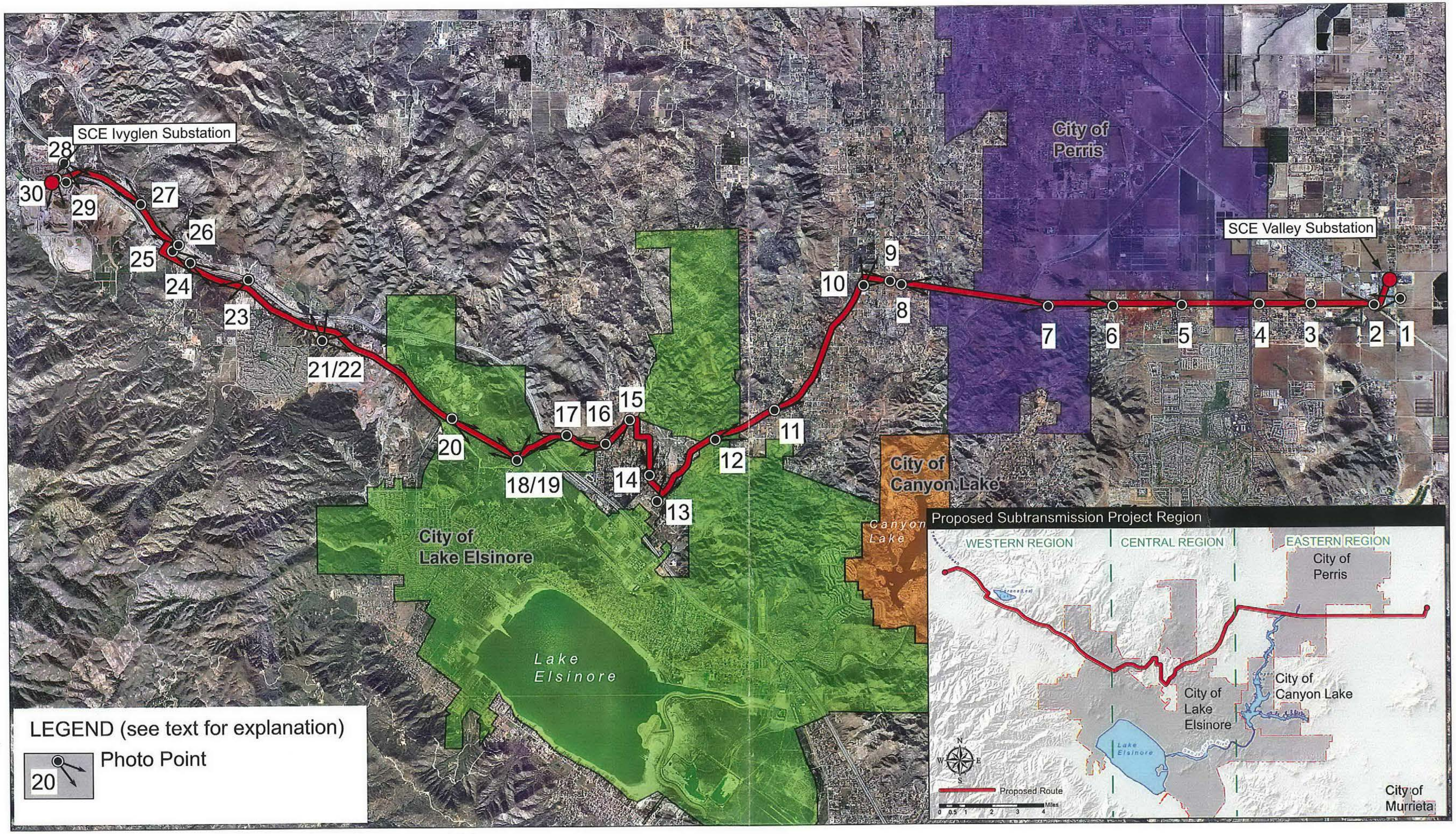
Potentially significant changes in the appearance of the Project Study Area would result from the removal of vegetation and the introduction of LDS poles and TSPs.

The Proposed Subtransmission Line from the SCE Valley Substation to Highway 74 would be openly visible. However, it would be within a highly vivid existing transmission line route and be unified with it. Other sections of the Proposed Subtransmission Line Route would either replace a variety of existing shorter poles or are out of general view.

The improvements to the SCE Valley and Ivyglen substations would have a less than significant impact on aesthetic resources. Physical modifications/additions to the substations such as 'A' frame type line dead end structures, circuit breakers on concrete foundations, and surge arresters would involve materials that are similar to the visual characteristics of facilities now existing on site and would by visually unified with them.

The telecommunications line to be installed on LDS poles and TSPs and underground would not be vivid. Impacts associated with the telecommunication line would be less than significant. The impact analysis is therefore not carried through the rest of the analysis.

Figure 4.2-2: Photo Points (See Table 4.4-2)



SOURCE: Southern California Edison 2006 and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Alternative Routes
- Substation
- City of Canyon Lake
- City of Lake Elsinore
- City of Perris

Miles: 0, 0.5, 1, 2, 3, 4

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Table 4.2-2: Characteristic Landscape Setting

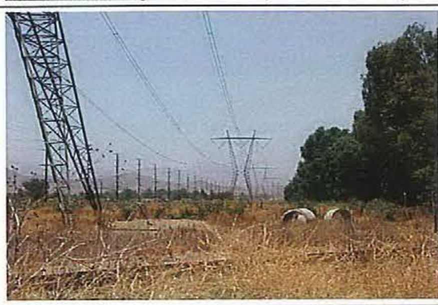
	**Photo #1:** SCE Valley Substation looking west **Approximate Mile:** 0.0 **Surrounding Uses:** Industrial **Dominant Visual Feature:** Valley Substation; Valley-Serrano 500 kV transmission line
	**Photo #2:** Route looking west from BSNF railroad tracks **Approximate Mile:** 0.1 **Surrounding Uses:** Industrial; rural residential **Dominant Visual Feature**: Valley-Serrano 500 kV transmission line
	**Photo #3:** Route looking west from Dawson Road **Approximate Mile:** 1.4 **Surrounding Uses**: Rural residential **Dominant Visual Feature**: Valley-Serrano 500 kV transmission line
	**Photo #4:** Route looking west from Encanto Road **Approximate Mile:** 2.2 **Surrounding Uses:** Rural residential; residential **Dominant Visual Feature**: Valley-Serrano 500 kV transmission line
	**Photo #5:** Route looking west from Murrieta Road **Approximate Mile:** 3.3 **Surrounding Uses:** Rural residential; residential, agriculture; undeveloped open space **Dominant Visual Feature**: Valley-Serrano 500 kV transmission line

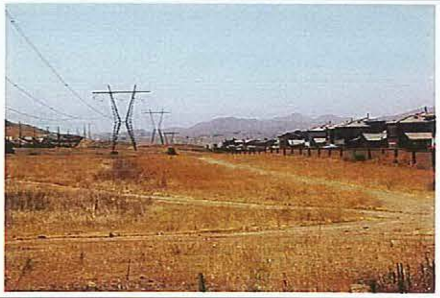
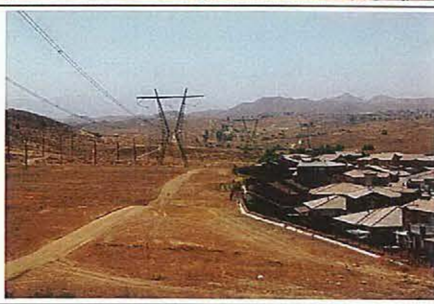
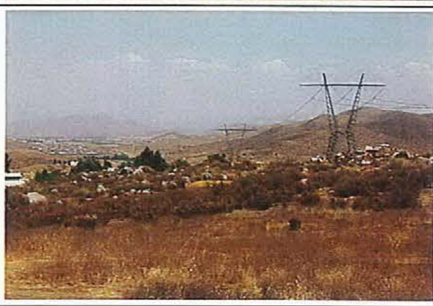
Table 4.2-2 *(Continued)*: Characteristic Landscape Setting	
	**Photo #6:** Route looking west from Goetz Road **Approximate Mile:** 4.3 **Surrounding Uses:** Residential; park **Dominant Visual Feature**: Valley-Serrano 500 kV transmission line; housing
	**Photo #7:** Route looking west **Approximate Mile:** 5.0 **Surrounding Uses:** Residential; park; undeveloped open space **Dominant Visual Features:** Transmission line route; housing; rolling topography
	**Photo #8:** Route looking east from near Thelda Road **Approximate Mile:** 7.4 **Surrounding Uses:** Rural residential / undeveloped open space **Dominant Visual Features:** Transmission lines; rolling topography; dump sites
	**Photo #9:** Route looking west from near Thelda Road **Approximate Mile:** 7.6 **Surrounding Uses:** Rural residential **Dominant Visual Feature**: Rolling topography
	**Photo #10:** Route looking northeast from Highway 74 at Festus Circle **Approximate Mile:** 8.0 **Surrounding Uses:** Rural residential; highway commercial **Dominant Visual Features:** Highway 74

Table 4.2-2 *(Continued)*: Characteristic Landscape Setting	
	**Photo #11:** route looking northeast from SR 74 near Wollens Road **Approximate Mile:** 9.8 **Surrounding Uses:** Rural Residential **Dominant Visual Features:** Highway 74
	**Photo #12:** Route looking northeast from near Trellis Lane **Approximate Mile:** 11.4 **Surrounding Uses:** Rural residential **Dominant Visual Features:** Highway 74; Rolling topography
	**Photo #13:** Route looking northeast from Highway 74 at Conard Avenue **Approximate Mile:** 12.9 **Surrounding Uses:** Residential; Commercial **Dominant Visual Feature**: Highway 74; Residential development
	**Photo #14:** Route looking northeast from Rostrata Avenue **Approximate Mile:** 13.1 **Surrounding Uses:** Rural residential **Dominant Visual Feature**: Rural residences; Eucalyptus forest
	**Photo #15:** Route looking west from El Toro Drive **Approximate Mile:** 14.2 **Surrounding Uses:** Rural residential; undeveloped open space **Dominant Visual Feature**: Santa Ana mountains; Rolling topography

Table 4.2-2 *(Continued)*: Characteristic Landscape Setting	
	**Photo #16:** Route looking west from Nichols Road **Approximate Mile:** 14.7 **Surrounding Uses:** Undeveloped open space **Dominant Visual Feature**: Nichols Road; Santa Ana mountains; Rolling topography
	**Photo #17:** Route looking west from Nichols Road **Approximate Mile:** 15.4 **Surrounding Uses:** Undeveloped open space **Dominant Visual Feature**: Nichols Road; Santa Ana mountains; Rolling topography
	**Photo #18:** Route looking east from Nichols Road **Approximate Mile:** 16.3 **Surrounding Uses:** Undeveloped open space **Dominant Visual Feature**: Rolling topography
	**Photo #19:** Route looking northwest from Nichols Road **Approximate Mile:** 16.3 **Surrounding Uses:** Undeveloped open space **Dominant Visual Feature**: Rolling topography
	**Photo #20:** Route looking southeast from Lake Street **Approximate Mile:** 17.4 **Surrounding Uses:** Residential (under development); open space **Dominant Visual Feature**: Residential development; Rolling topography

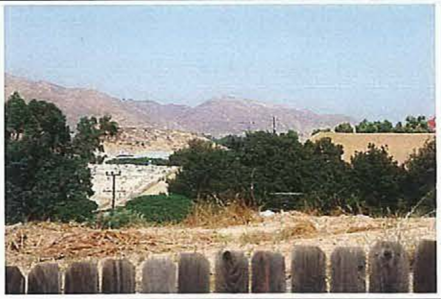
Table 4.2-2 *(Continued)*: Characteristic Landscape Setting	
	**Photo #21:** Route looking east from Hostettler **Approximate Mile:** 21.0 **Surrounding Uses:** Rural residential **Dominant Visual Feature**: Trees; Rolling topography
	**Photo #22:** Route looking north from Hostettler **Approximate Mile:** 19.7 **Surrounding Uses:** Rural residential **Dominant Visual Feature**: Hostettler Road; Trees; Hills
	**Photo #23:** Route looking southwest from De Palma Road **Approximate Mile:** 21.4 **Surrounding Uses:** Residential, undeveloped open space **Dominant Visual Feature**: Undeveloped open space / grasslands; Mountain backdrop; Subdivisions
	**Photo #24:** Route looking southeast from De Palma Road at Glen Eden Road **Approximate Mile:** 22.1 **Surrounding Uses:** Residential, commercial; undeveloped open space **Dominant Visual Feature:** I-15; Undeveloped open space / grasslands; Mountain backdrop; Subdivisions
	**Photo #25:** Route looking southeast from I-15 (Corona Freeway) **Approximate Mile:** 22.4 **Surrounding Uses:** Residential, commercial; undeveloped open space **Dominant Visual Feature:** I-15; Undeveloped open space / oak woodland and chaparral; Mountain backdrop; Subdivisions

Table 4.2-2 *(Continued)*: Characteristic Landscape Setting	
	**Photo #26:** Route looking northwest from I-15 (Corona Freeway) at Indian truck Trail interchange at line crossing **Approximate Mile:** 22.6 **Surrounding Uses:** Residential, industrial; commercial; recreation; undeveloped open space **Dominant Visual Feature**: I-15; Undeveloped open space / grasslands; Mountain backdrop; Subdivisions
	**Photo #27:** Route looking northwest from I-15 (Corona Freeway) **Approximate Mile:** 23.3 **Surrounding Uses:** Residential, industrial; commercial; recreation; undeveloped open space **Dominant Visual Feature**: I-15; undeveloped open space / grasslands; mountain backdrop
	**Photo #28:** Route looking southeast I-15 (Corona Freeway) **Approximate Mile:** 24.6 **Surrounding Uses:** Residential; industrial; commercial; recreation; undeveloped open space **Dominant Visual Feature**: I-15
	**Photo #29:** Route looking northeast from Temescal Canyon Road **Approximate Mile**: 24.8 **Surrounding Uses:** Undeveloped open space **Dominant Visual Feature**: Temescal Canyon Road
	**Photo #30:** Ivyglen Substation looking south from Temescal Canyon Road **Approximate Mile**: 25.0 **Surrounding Uses:** Residential; undeveloped open space **Dominant Visual Feature**: Ivyglen Substation

Construction Impacts

Subtransmission Line

Construction would generally be conducted during daylight hours and last for approximately 12 to 18 months. Construction impacts would be noticeable to area residents and motorists along the local road system. Construction activities that may be seen include:

- Removal of vegetation along the Proposed Subtransmission Line Route for construction access and to meet vegetation and fire management guidelines
- Removal of vegetation and grading of a new access route to allow construction and maintenance vehicle access along Proposed Subtransmission Line Segment W-1 between Fir Street and Foster Road
- Removal of power poles that would no longer be used after construction of the Proposed Project
- Temporary construction signs
- Temporary safety and alternative routing signs for local streets
- Temporary outdoor storage of materials, construction and office supply trailers, and temporary security fencing
- Large pieces of equipment used for constructing access roads, auguring holes for foundations, transporting and lifting LDS poles and TSPs, hauling concrete, water trucks spraying water to control dust, and assorted construction vehicles (refer to Table 3.3-2 in the Project Description)
- Temporary construction-limit fencing
- Spraying of embankment slopes with an erosion control mixture of seed, water, and slope stabilizer, which may be vivid in color

The visual impacts associated with construction are unavoidable and are considered temporary and less than significant. Standard construction methods would be followed to minimize the visual impact caused by construction. Fugitive dust from construction would likely be noticed by residents immediately adjacent to the project limits.

Construction of the Proposed Subtransmission Line would temporarily visually disturb areas greater than that needed for the permanent access roads. Each new pole site would be graded or cleared to provide a reasonably level pad and cleared of any vegetation that would hinder pole installation. Construction access to the wooden poles to be removed would also be required. Excess spoils, if not used as backfill for holes left after removal of nearby wooden distribution poles, would be distributed at each pole site.

Substations

Construction activities at the substations would involve materials and equipment storage, layout, and facility development. All activities would be limited to areas within existing substation fence lines. These areas are void of vegetation and consist of compacted gravel, concrete, or asphalt ground plane. No long-term visible changes would be evident.

Operational Impacts

Scenic Vistas

Subtransmission Line. There are no dedicated, publicly accessible scenic vistas existing within foreground or middleground views (3 to 5 miles) to the Project Study Area, therefore, the Proposed Subtransmission Line would not cause significant impacts related to scenic vistas.

Between approximately mile 10.5 and 12.5, portions of the Proposed Subtransmission Line that would be located at higher elevations may be within the viewshed of Lake Elsinore (City of Lake Elsinore 2006 Aesthetic and Visual Resources Background Report, Figure 9.3, Viewshed and Vantage Points). However, the Proposed Subtransmission Line Route would be approximately 3.5 miles away from the center of the lake and would not be evident at that distance. As a result, the impact would be less than significant.

Substations. There would be no effects on scenic vistas created by the proposed changes to the SCE Valley or Ivyglen substations.

Scenic Resources within a State Scenic Highway

Subtransmission Line. Highway 74 and I-15 are Eligible State Scenic Highways within the Project Study Area. As Eligible State Scenic Highways, I-15 and Highway 74 are identified in the Riverside General Plan (2003) as scenic resources. However, because Highway 74 and I-15 are not Designated State Scenic Highways, the Proposed Subtransmission line would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Substations. The SCE Valley and Ivyglen substations are not seen from Highway 74 or I-15; therefore, the changes to the substations would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

Visual Character and Quality

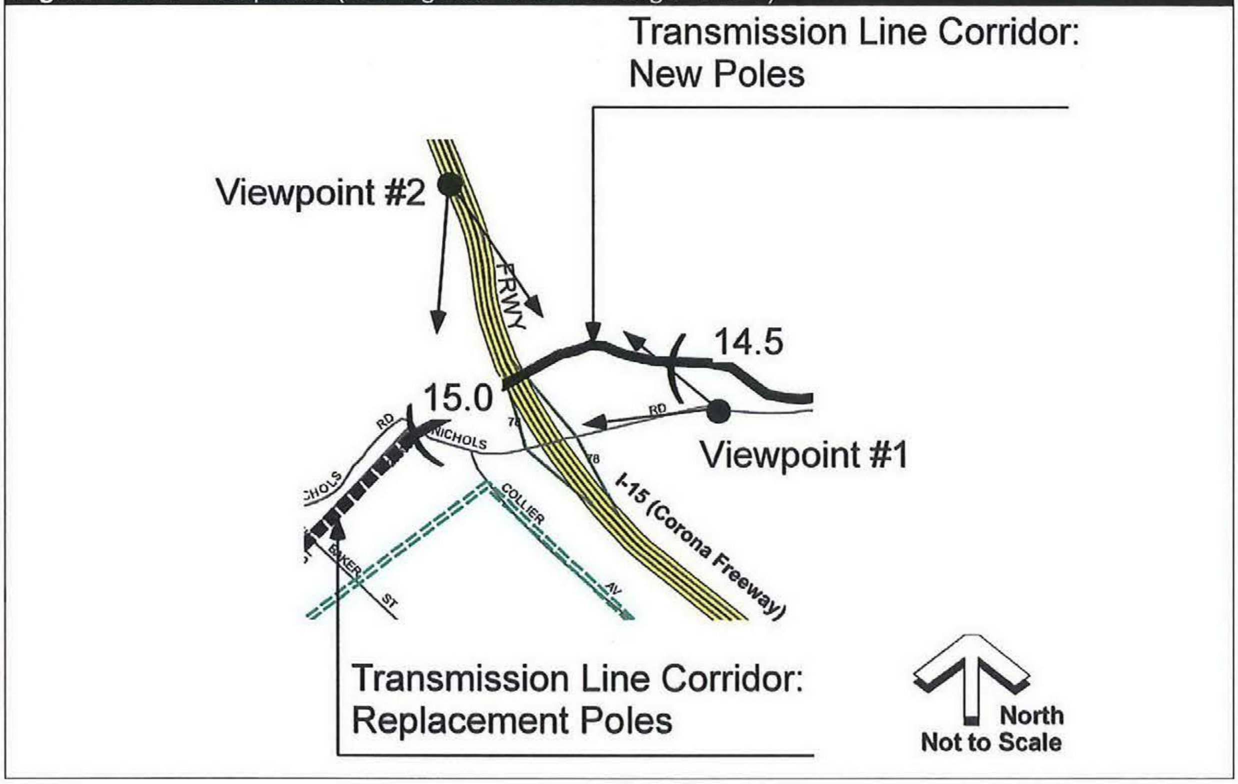
Subtransmission Line. At the junction of E-1 and C-1, the Proposed Subtransmission Line would cross Highway 74 within SCE's existing Valley-Serano 500 kV ROW. Because of the visibility of the existing 500 kV structures and circuits within the ROW, SCE has determined that the visual impact of this crossing would be less than significant.

The Proposed Subtransmission Line would be visible from Highway 74 for the entire length of Segment C-1. The Proposed Subtransmission Line would involve new poles and circuits parallel to Highway 74 on the west side of the highway. This new route would parallel existing distribution lines composed of wood poles located on both sides of the highway. Because of the existing distribution lines located on both sides of the highway, SCE has determined that the visual impact of this segment of the Proposed Subtransmission Line would be less than significant.

The Proposed Subtransmission Line would be visible as it crosses I-15 in three locations. Each crossing would involve 100-foot-high TSPs that would be sufficient to provide clearance over the freeways. Two of these are new crossings and one is at an existing crossing. The crossings are:

> **Segment C-6:** The Proposed Subtransmission Line would cross I-15 north of the Nichols Road interchange. Figure 4.2-3 illustrates two viewpoints along the Proposed Subtransmission Line Route near I-15/Nichols Road interchange. Existing views from these viewpoints and simulations of the Proposed Subtransmission Line are shown in Figures 4.2-4 through 4.2-7. Traveling south on I-15, the Proposed Subtransmission Line crossing would be seen for an approximately 0.75-mile

Figure 4.2-3: Viewpoints (see Figures 4.12-4 through 4.12-7)



distance. While the visual impact of the new crossing would be adverse, SCE has determined that it is less than significant when viewed within the context of the multiple existing crossings over I-15, both north and south of this location.

Traveling north on I-15, the Proposed Subtransmission Line crossing would be partially blocked by the Nichols Road overpass of I-15. Therefore, SCE has determined that the visual impact would be less than significant.

Segment W-8: The Proposed Subtransmission Line would cross I-15 on the east side of the Indian Truck Trail interchange. While the visual impact of the new crossing would be adverse, SCE has determined that it is less significant when viewed within the context of the multiple existing crossings over I-15, both north and south of this location.

Segment W-10: The Proposed Subtransmission Line would cross I-15 on the south side of the Temescal Canyon Road undercrossing. This crossing would use existing power poles with the additional circuits. This crossing would be a less than significant aesthetic impact.

In addition, the Proposed Subtransmission Line would be visible from I-15 between approximately mile 18.7 and mile 23.5. These locations are:

Segment W-4: The Proposed Subtransmission Line would generally parallel I-15 on the south side of I-15 from Hostettler Road to its crossing of I-15 at the Indian Truck Trail interchange. For the entire length of this segment the Proposed Subtransmission Line would be combined with an existing distribution line and replace existing wood poles with steel poles. Combining the two lines on new poles

Figure 4.2-4: Viewpoint #1–Existing View Looking West from Nichols Road to I-15

Figure 4.2-5: Viewpoint #1–Siulation of Proposed Subtransmission Line Route Looking Northwest from Nichols Road to I-15

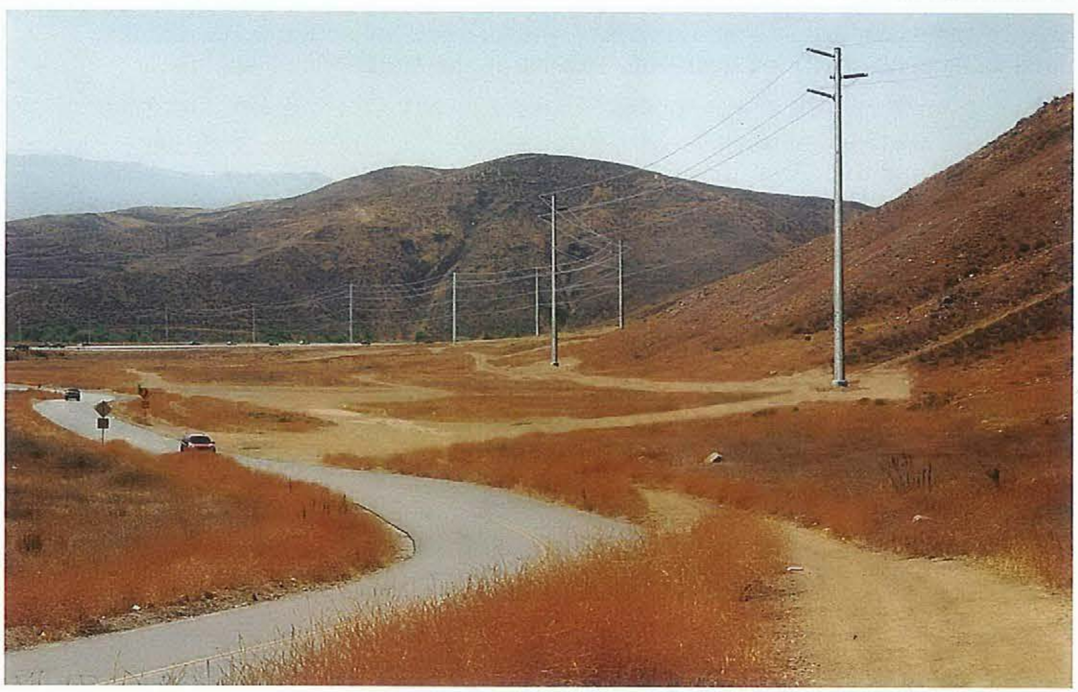


Figure 4.2-6: Viewpoint #2–Existing View Looking South from I-15

Figure 4.2-7: Viewpoint #2 –Simulation of Proposed Subtransmission Line Route Crossing of I-15

would minimize their visibility and would reduce the facilities' vividness. However, taller poles near ridgelines may increase the skylining effect already evident in some route locations. Additionally, the color of the new steel poles and presence of new access roads will be vivid through their contrast with the oak woodland and chaparral associations through which they pass. Given the existing distribution line and future developments planned along this section of I-15, impacts created by an increased height of poles would be less than significant.

Segment W-10: The Proposed Subtransmission Line would be developed along a new alignment that parallels I-15 immediately on the north side of I-15 from its crossing near Indian Truck Trail to its crossing at Temescal Canyon Road. This new alignment also parallels SCE's existing Vallley-Elsinore-Ivyglen 115 kV line. The existing view from I-15 (see Figure 4.2-2, Photo Point #27) and simulation of the Proposed Subtransmission Line are shown in Figures 4.2-8 and 4.2-9. Given that the new alignment is already within view of SCE's existing Valley-Elsinore-Ivyglen 115 kV line, SCE has determined that the visual impacts while adverse are less than significant.

Substations. Implementation of the Proposed Project would not visibly change the existing visual character of the substations.

Light and Glare

Subtransmission Line. Light duty steel poles and TSPs for the Proposed Subtransmission Line would be ordered with a flat finish and would continue to weather and dull over time. The impacts related to light and glare would be less than significant.

Substations. Under normal operating conditions, the Ivyglen substation would not be lit at night and the Valley Substation would not require any additional lighting. Ivyglen substation lighting would be used only when required for maintenance outages or emergency repairs occurring at night. Substation lighting typically consists of high-pressure sodium lights located in the switch racks, around the transformer banks, and in areas of the yard where operating and maintenance activities may take place. Maintenance lights would be controlled by a manual switch and would normally be in the off position. Lights would be directed downward, and shielded to reduce glare outside of the facility. Impacts that may be created by any lighting of new project-related equipment that is in addition to existing lights would be less than significant.

4.2.5 SCE PROPOSED MEASURES

The following proposed design considerations would reduce potential impacts from the Proposed Subtransmission Line facilities to less than significant levels.

AES-SCE-1: To reduce the long-term visibility of ground disturbance associated with construction of the Proposed Subtransmission Line and retain intactness of the characteristic landscape, all lands disturbed by construction and excess soil placement, with the exception of permanent access roads, would be revegetated with the appropriate native species.

AES-SCE-2: To reduce the potential for reflection of sunlight from project facilities, reduce color contrasts, and visually unify the project with the surrounding characteristic landscape, SCE would:

- Use only non-specular conductors.
- Use light duty and tubular steel poles for the Proposed Subtransmission Line that will weather to be non-reflective.

Figure 4.2-8: Existing View Looking Northwest from I-15 (see Figure 4.2-2, Photo Point #27)

Figure 4.2-9: Simulation of Proposed Subtransmission Line Looking Northwest from I-15

AES-SCE-3: To reduce the contrast and presence of the Proposed Subtransmission Line, SCE will order galvanized LDS poles and TSPs with a flat finish.

AES-SCE-4: To reduce the contrast and presence of the Proposed Subtransmission Line in Segment W-4, where possible SCE will locate poles off of ridgelines and will site construction and permanent access roads such that they will be screened from view by existing oak woodland and chaparral vegetation as seen from I-15.

4.2.6 MITIGATION MEASURES

Impacts to aesthetic resources would be less than significant, and therefore, no mitigation is required.

4.2.7 ALTERNATIVES

The impact comparison Table 4.2-3 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between proposed route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.2-3: Aesthetic Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/Mitigation Measures
E-2	Would cross through more of the City of Perris residential areas north of existing SCE rights-of-way.	Would be a vivid element in the residential land use setting. The impact would be significant.	Greater Impact	The impact would be unavoidable.
C-2	Predominantly rural residential development and some highway commercial.	Portion would parallel Highway 74, an eligible State Scenic Highway. Would be combined with an existing distribution line. Would decrease vividness and increase overall unity of area.	Less Impact	Impact would be reduced using SCE measures.
C-7	East side of Highway 74 corridor with predominantly rural residential development.	Would parallel Highway 74, an eligible State Scenic Highway, and be a vivid element of the highway corridor. The impact would be significant.	Equal Impact	Impact would be reduced using SCE measures and combining with existing distribution lines, telephone, and/or cable lines but would remain significant. The impact would be unavoidable.
W-2	Undeveloped open space lands (grasslands and chaparral) with significant topographic variation.	Would parallel I-15, an eligible State Scenic Highway, and be a vivid element of the highway corridor. The impact would be significant.	Greater Impact	The impact would be significant and unavoidable.

Table 4.2-3 *(Continued)*: Aesthetic Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/Mitigation Measures
W-3	I-15 overcrossing of Temescal Canyon Road.	Would use existing power poles with additional circuits and not a vivid addition to existing conditions.	Less Impact	Impact would be reduced using SCE measures.
W-5	Would cross through more of the new residential development just southeast of Glen Ivy and on the south side of I-15.	Would parallel I-15, an eligible State Scenic Highway, resulting in subtransmission line routes on both sides of the freeway and be a vivid element of the highway corridor. Impact would be significant.	Greater Impact	The impact would be unavoidable.

4.2.8 REFERENCES

City of Lake Elsinore. 2006. General Plan Update, Aesthetic and Visual Resources Background Report. January 2006.

City of Perris. 2005. General Plan Land Use, Conservation, and Open Space Elements. July 2005.

County of Riverside. 2003. General Plan Land Use and Multipurpose Open Space Elements.

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4.3 Agricultural Resources

4.3.1 ENVIRONMENTAL SETTING

The region surrounding the Project Study Area (Figure 4.3-1) includes farmland and grazing lands. The State of California Department of Conservation, Division of Land Resource Protection, maps the lands of California and places them into the following categories (Department of Conservation 2004):

- Prime Farmland
- Farmland of Statewide Importance
- Unique Farmland
- Farmland of Local Importance
- Grazing Land
- Urban and Built-up Land
- Other Lands

The Proposed Subtransmission Line Route runs primarily through Grazing Land and other urban or undesignated lands and does not cross Prime or Unique Farmland. The route crosses small areas of land designated Farmland of Local Importance and one short segment of Farmland of Statewide Importance. The Valley and Ivyglen substations are not located on agricultural land.

Project Study Area

There are two agricultural preserves in the Project Study Area:

- Perris Valley #6 (Figure 4.3-1)
- Glen Ivy #1 (Figure 4.3-1)

The Perris Valley #6 preserve is in the area of the Valley Substation, but is more than 0.75 miles north of the Proposed Subtransmission Line. The Glen Ivy #1 preserve includes the entirety of the Glen Ivy community that lies immediately southeast of the Ivyglen Substation and the termination of the Proposed Subtransmission Line (County of Riverside 2006).

Site visits have revealed that none of the lands in the Project Study Area are currently cultivated for active farming and that the primary use of these non-urbanized lands is grazing.

4.3.2 REGULATIONS, PLANS, AND STANDARDS

Federal

There are no federal agricultural regulations applicable to the Proposed Project.

State

Regulations for the protection of important farmland are primarily implemented at the county and city levels, including the Williamson Act, the State's principal agricultural land protection program.

Regional and Local

SCE intends to develop facility designs that are compatible with local zoning; however, the Proposed Project is exempt from local land use and zoning regulations and permitting.

County of Riverside

The Riverside County Integrated Project (RCIP) is a program to coordinate future conservation, transportation, housing, and economic needs in Riverside County, including the update of the 2003 County General Plan. The vision of the RCIP reflects the importance of agricultural uses and the sensitivity of development in and around agricultural areas:

> Agricultural land that remains economically viable, either as a permanent or temporary economic resource, is well protected by policies, ordinances, and design regulations applicable to new development that may be planned nearby. (RCIP 2006)

The following policies apply to properties designated as agriculture on the General Plan and area plan land use maps.

> **LU 16.4:** Encourage conservation of productive agricultural lands. Preserve prime agricultural lands for high-value crop production.
>
> **LU 16.5:** Continue to participate in the California Land Conservation Act (the Williamson Act) of 1965.
>
> **LU 16.6:** Require consideration of State agricultural land classification specifications when a 2 ½-year Agriculture Foundation amendment to the General Plan is reviewed that would result in a shift from an agricultural to a non-agricultural use.

Chapter 12.16 of the Riverside County Zoning Code provides the regulatory framework for agricultural preserves. In Section 12.16.030(A) a list of compatible uses is provided and includes:

> Gas, electric, water and communication utility facilities, and public service facilities of like nature operated by a public agency or mutual water company

City of Lake Elsinore

The City of Lake Elsinore General Plan contains objectives and policies in the Open Space/Conservation Element to encourage the conservation of agricultural lands. The Proposed Subtransmission Line does not cross or border any agricultural preserve land within the City of Lake Elsinore.

City of Perris

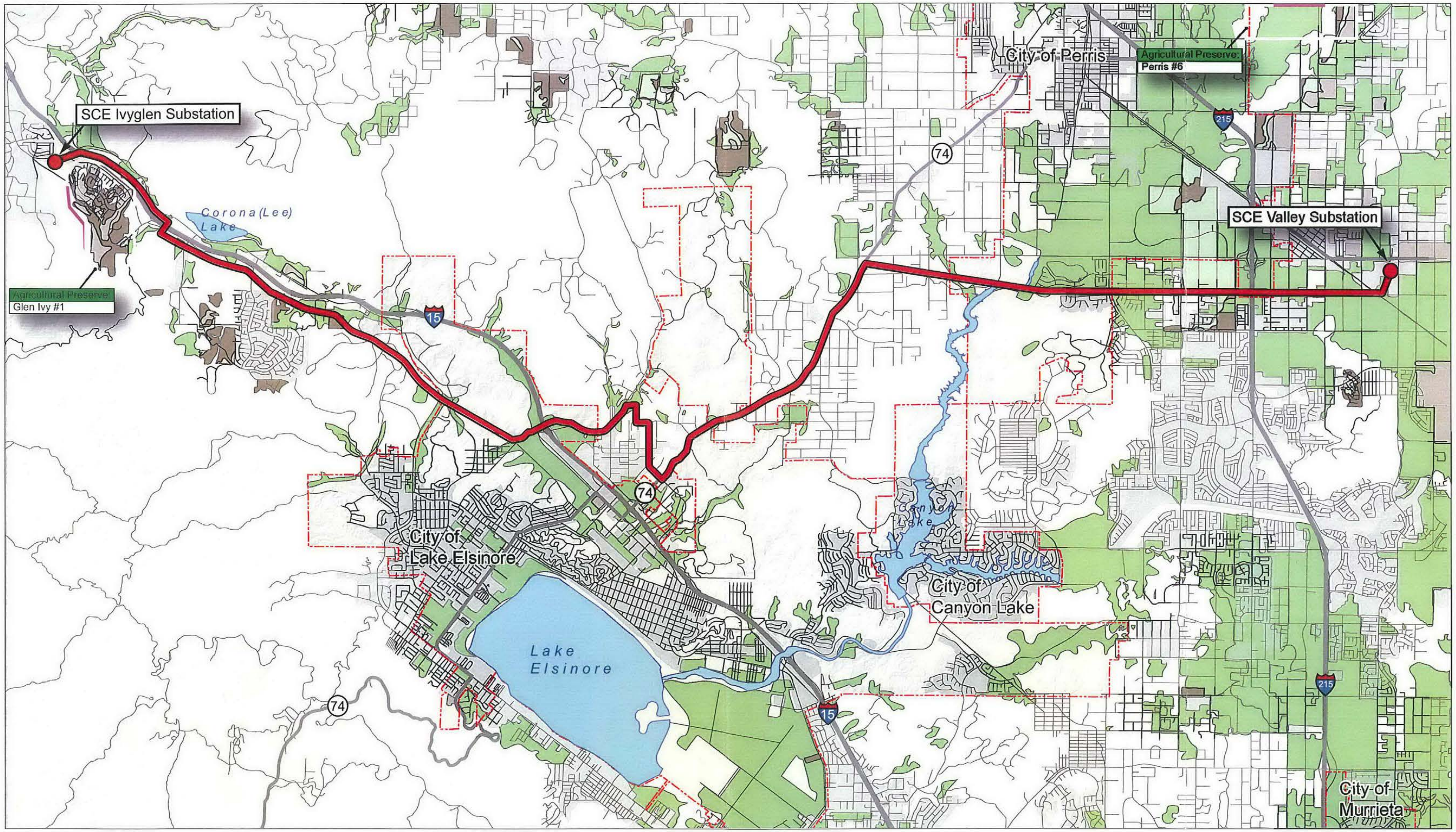
The City of Perris Zoning Ordinance Chapter 19.74 contains policies for the designation of appropriate lands as Agricultural Preserves, pursuant to the Williamson Act. The Proposed Subtransmission Line would not cross or border any agricultural preserve land within the City of Perris.

4.3.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses
- Conflict with existing zoning for agricultural use, or a Williamson Act contract
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use

Figure 4.3-1: Agricultural Resources



SOURCE: Southern California Edison 2006, Riverside County Land Information System 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Interstate Highway
- State Route
- Road
- Substation
- City Boundary
- Farmland of Local Importance
- Farmland of Statewide Importance
- Prime Farmland
- Unique Farmland
- Urban Area
- Water
- Agricultural Preserve Area

N W E S

0 0.5 1 2 3 4 Miles

MHA ENVIRONMENTAL CONSULTING, INC.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

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4.3.4 IMPACT ANALYSIS

Impact Summary

The proposed modifications to the Valley and Ivyglen substations would have no impact on agricultural lands or operations. The construction and maintenance of the Proposed Subtransmission Line and telecommunications line would have a less-than-significant effect on the farmlands that the lines would cross.

Construction Impacts

State Designated Lands

Subtransmission Line and Telecommunications Line. The Proposed Subtransmission Line and associated telecommunications line would cross only 1.1 miles of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance combined; the Proposed Project would therefore not result in a significant conversion of such lands to non-agricultural uses. Only 2.72 acres of agricultural lands would be disturbed due to the installation of new poles. Table 4.3-1 illustrates the amount of agricultural land that would be disturbed by construction of the Proposed Subtransmission Line and associated telecommunications line.

Comparison of the total amount of farmland of all types that would be disturbed by the Proposed Subtransmission Line reveals that only 8.2 miles of that line would cross farmland of any type and at most would disturb 2.72 acres of farmland. The disturbance of productive farmland could be considered a potentially significant impact, but because the projected disturbance is only 2.72 acres of farmland, out of a total 180,178 acres of farmland within Riverside County, it is not considered significant.

Approximately 16 miles of new roads would be constructed as part of the Proposed Subtransmission Line and associated telecommunications line. A portion of those new roads would be constructed on lands that are designated agricultural. The portion of the new roads that would be constructed on agricultural lands is not expected to have a significant effect because the total number of acres that would be developed with roads as part of the Proposed Subtransmission Line and associated telecommunications line, 24 acres, represents approximately 0.01% of the 180,178 acres of lands designated agricultural in Riverside County. Therefore, there would be no significant impact on state designated farmlands.

Existing Zoning and Williamson Act

The Proposed Subtransmission Line would not cross any agricultural lands currently under Williamson Act contract (Department of Conservation 2002). Therefore, there would be no impact related to existing zoning and Williamson Act lands.

Existing Farmland

Subtransmission Line and Telecommunications Line. The construction of the Proposed Subtransmission Line would include the installation of new subtransmission poles and the construction of roads to provide access to and between the poles. This construction would disturb some lands designated as agriculture lands on the Farmland of California Map (Department of Conservation 2004) prepared by the California State Department of Conservation Division of Land Resource Protection. The Proposed Subtransmission Line Route was examined to determine if the Proposed Project could result in the division of farmland, such that the future viability of that land for agricultural activities could be jeopardized. The farmlands over which the Proposed Subtransmission Line would be constructed are limited to grazing lands. A minor amount of land

Table 4.3-1: Disturbed Farmlands (Estimated)

	Subtransmission Line Segment	Length of Line (feet)	Number of Poles	Area Disturbed by Poles (acres)
Prime Farmland	E-1	259	1	0.01
Unique Farmland	W-1, W-4	1,851	8	0.10
Farmland of Statewide Importance	E-1	3,695	18	0.23
Farmland of Local Importance	E-1, C-1, C-3, C-4, C-6, W-1, W-4, W-10	37,321	183	2.38
Total Farmland Disturbed		43,126	210	2.72

SOURCE: MHA 2006

would be disturbed by the Proposed Subtransmission Line (see Table 4.3-1), primarily for new access roads. The ability to successfully use the land for its current function for grazing would not be impeded or diminished because there would be no physical barrier to limit the free movement of cattle and other livestock from one side of the Proposed Subtransmission Line to the other. Further, there would be no impediments to the movement of farm equipment from one side of the Subtransmission Line to the other. Therefore, there would be no impact related to conflicts with existing farmland.

Operational Impacts

The Proposed Subtransmission Line and telecommunications line would be unmanned and the improved electrical equipment within the substations would require no additional operational personnel. Remote operation of the Proposed Project would not affect agricultural lands.

Routine maintenance would include equipment testing, equipment monitoring and repair, as well as emergency and routine procedures for service continuity and preventative maintenance. Based on current agricultural usage (grazing), the required access for maintenance would have a temporary impact on those farmlands that would be crossed by the Proposed Subtransmission Line and telecommunications line. Effects to farmlands from temporary inspection and maintenance of the Proposed Subtransmission Line and telecommunications line would be less than significant.

4.3.5 SCE PROPOSED MEASURES

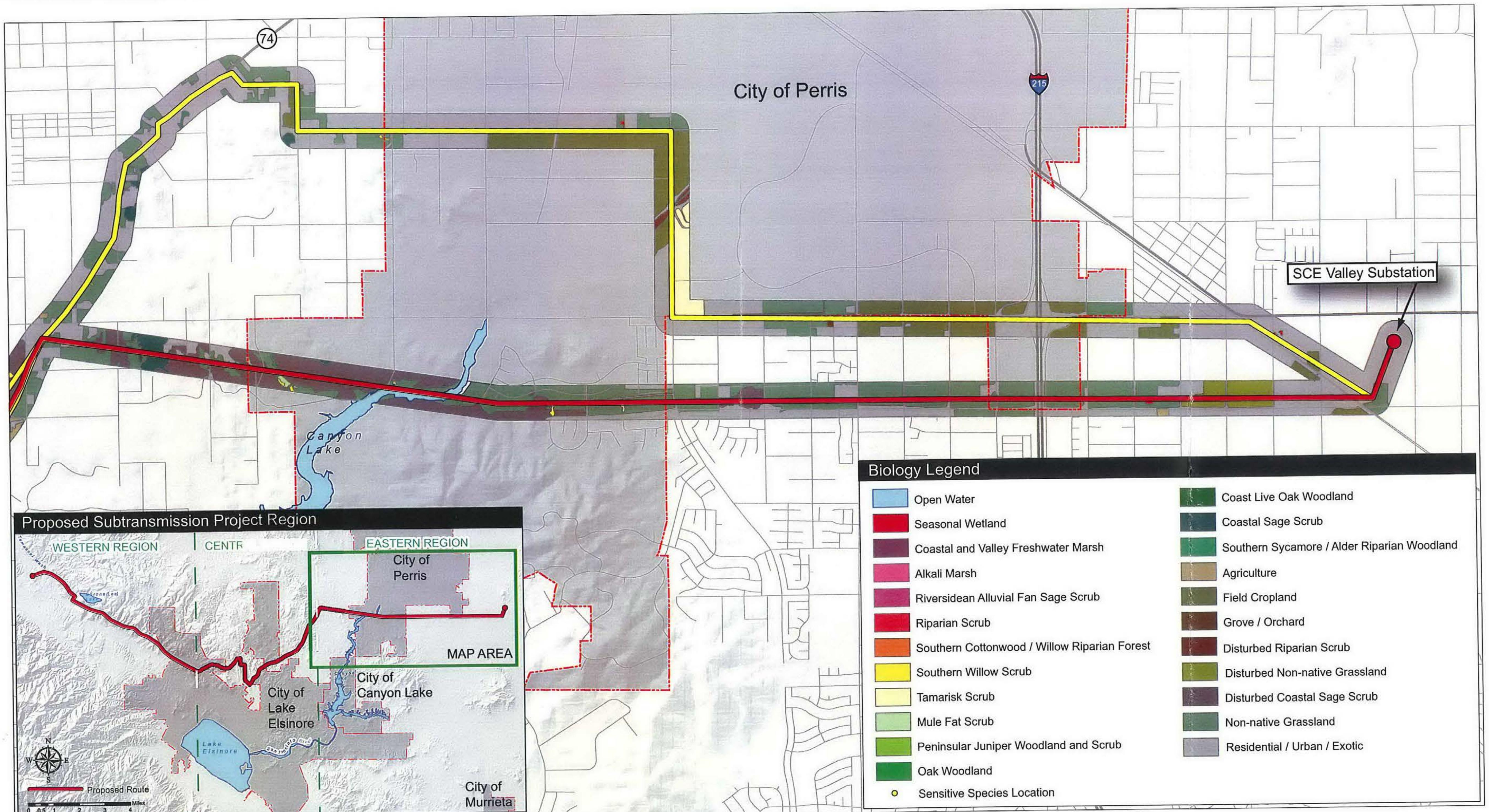
Implementation of SCE Proposed Measure AG-SCE-1 would further reduce the impacts discussed above.

> **AG-SCE-1:** SCE will coordinate construction schedules with landowners to ensure that construction and maintenance do not interfere with grazing operations on agricultural lands.

4.3.6 MITIGATION MEASURES

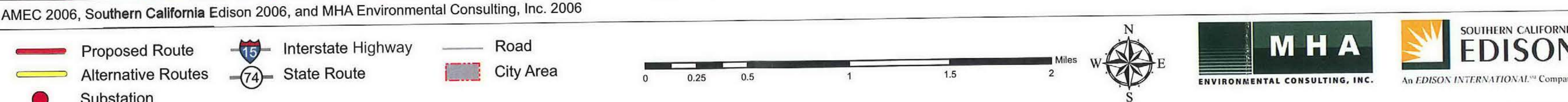
Impacts to agricultural resources would be less than significant, and therefore, no mitigation is required.

Figure 4.5-1: Vegetation Communities and Sensitive Species Occurrences



SOURCE: AMEC 2006, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND



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4.3.7 ALTERNATIVES

The impact comparison Table 4.3-2 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.3-2: Agriculture Impact of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Would cross additional Farmland of Statewide Importance and Farmland of Local Importance but would avoid crossing any Prime Farmland	No additional impact due to the Proposed Subtransmission Line's location along existing roadways	Equal Impact	Same as Proposed Route
C-2	Would cross additional Farmland of Local Importance	This alternative segment would require four poles and would disturb 0.05 additional acres of Farmland of Local Importance	Greater Impact	Same as Proposed Route
C-7	Would cross some Farmland of Local Importance	Would cross approximately the same amount of Farmland as Proposed Route	Equal Impact	Same as Proposed Route
W-2	Would cross Grazing Land at the base of the hills and Farmlands of Local Importance	Three additional poles would be located within Farmlands of Local Importance and six fewer would be located in Unique Farmland	Less Impact	Same as Proposed Route
W-3	Would not cross farmlands inasmuch as this segment would cross I-15	No additional impacts as the segment would not pass through any state designated farmlands	Equal Impact	Same as Proposed Route
W-5	Would cross Prime Farmland and Unique Farmland that has been developed for non-agricultural uses	This alternative segment would cross lands designated by the state in 2004 as Prime and Unique Farmlands, but there would be no additional impact as those lands are already developed for non-agricultural uses	Equal Impact	Same as Proposed Route

4.3.8 REFERENCES

County of Riverside. 2003. *County of Riverside General Plan.* Prepared by the Riverside County Integrated Project.

County of Riverside. 2003a. *County of Riverside General Plan.* Land Use Section Table LU-1. Prepared by the Riverside County Integrated Project.

County of Riverside. 2006. County of Riverside Land Information System. Website: http://www2.tlma.co.riverside.ca.us/aims/pa/rclis. Accessed April 2006.

Department of Conservation. 2004. *Farmland in California* Map. Prepared by the State of California, Department of Conservation, Division of Land Resource Protection.

Department of Conservation. 2002. *Riverside County Williamson Act Lands* Map. Prepared by the State of California, Department of Conservation, Division of Land Resource Protection.

RCIP (Riverside County Integrated Project). 2006. Website: http://www.rcip.org. Accessed June 2006.

4.4 Air Quality

4.4.1 ENVIRONMENTAL SETTING

Air Basins

The state of California is divided geographically into fifteen regional air basins to facilitate the management of air resources in the state. These basins are generally delineated along meteorological and geographic boundaries to form an area with homogenous air quality conditions throughout. The Project Study Area is located within the South Coast Air Basin (SCAB), which is regulated by the South Coast Air Quality Management District (SCAQMD). The basin is bordered by the Pacific Ocean to the west, the San Gabriel and San Bernardino Mountains to the north, and San Jacinto Mountains to the east.

Climate

The largest community in the Project Study Area is the City of Lake Elsinore, which is situated in a relatively central location related to the Proposed Project. Weather trends at Lake Elsinore are relatively typical of the entire Project Study Area. Climatic conditions for the City of Lake Elsinore are typical to inland areas of Southern California. Summers are routinely hot and dry, with cool winters, occasional thunderstorms, and gusty winds.

Temperatures reported for Lake Elsinore and the surrounding area fluctuate substantially with season. Average high temperatures in the summer routinely reach into the upper 90s, with average summertime lows in the high 50s to low 60s. Winter temperatures for the region are cooler, with highs in the 60s and lows around 30° F.

The region surrounding the Project Study Area does not receive large amounts of precipitation. Average annual precipitation is 10.7 inches, with record low and high rainfall set at 5.3 inches and 21.4 inches, respectively. Approximately 85 percent of the annual rainfall occurs from November through March. Light winter snow can occur in the area at higher elevations, but snowfall is not common. The Western Regional Climate Center coordinates climate data for Riverside County. Average humidity is generally high in the area, ranging from 53 to 82 percent depending on time of day, with mornings bringing the highest humidity (WRCC 2006). Winds originate in the west and southwest. They are typically brisk and persistent throughout the Project Study Area, with gusty winds occurring during the spring and summer months. Wind speeds average approximately 7 mph (City Data 2006).

Air Quality

Various monitoring stations are located throughout the SCAB to monitor levels of criteria pollutants. The SCAB has climatic conditions and topography (including light winds, abundant sunlight, and low vertical mixing) that are conducive to the accumulation of air pollutants. Air quality in the SCAB is generally considered to be poor throughout, though some areas within the basin have better air quality than others. The nearest air monitoring station is the Lake Elsinore station. Other stations in the vicinity include the Perris, Riverside-Magnolia, and Riverside-Rubidoux stations. For the ozone season of 2005, which runs from May through October, 50 days were logged at the Lake Elsinore monitoring station that exceeded the state standard of 0.09 parts per million (ppm) during any one-hour period. For that same period, seven days were recorded that exceeded the federal standard of 0.12 ppm for any one-hour period. Federal standards also require that ozone levels not exceed 0.08 ppm during an eight-hour average. During the 2005 ozone season that level was exceeded 15 times at the Lake Elsinore monitoring station. In 2004, the days exceeding the same respective levels where: 34 for 0.09 ppm one-hour, 2 for 0.12 ppm one-hour, and 21 for 0.08 ppm eight-hour.

Particulate (PM_{10}) data are not available for 2005. However, PM_{10} concentrations exceeded the state standards 17 times in 2004 and 15 times in 2003 (50 $\mu g/m^3$ based on 24 hour average), but did not exceed federal standards (150 $\mu g/m^3$ based on 24 hour average) during the years either 2003 or 2004 (SCAQMD 2006). Much of the air pollution in the SCAB results from pollution originating in the urban areas of Los Angeles and Orange County. Table 4.4-1 provides air quality data from the Lake Elsinore area and vicinity.

4.4.2 REGULATIONS, PLANS, AND STANDARDS

Overview

Air quality is described by comparing contaminant levels in ambient air samples to national and state standards. Ambient air quality standards in California are the responsibility of the US Environmental Protection Agency and the California Air Resources Board (CARB). Standards are set at levels of concentrations to provide a significant level of safety to public health and to protect public welfare.

Federal

The Clean Air Act (amended in 1990) requires the US EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. *Primary standards* set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. *Secondary standards* set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The US EPA has set NAAQS for six principal or "criteria" pollutants:

- Ozone (O_3)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Sulfur dioxide (SO_2)
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Lead (Pb)

The California Air Resources Board has set California Ambient Air Quality Standards (CAAQS) for four additional pollutants. They include:

- Visibility Reducing Particles
- Sulfates (SO_4)
- Hydrogen Sulfide (H_2S)
- Vinyl Chloride

A description of criteria pollutants is shown in Table 4.4-2 below. The standard limits are listed in Table 4.4-1.

Pursuant to the Clean Air Act, the US EPA classified air basins (i.e. distinct geographic regions) as either "attainment" or "non-attainment" for each criteria pollutant, based on whether or not the federal ambient air quality standards have been achieved. National air quality standards are set at levels determined to be protective of public health with an adequate safety margin. Some air basins have not received sufficient analysis for certain criteria air pollutants and are designated as "unclassified" for those pollutants.

Table 4.4-1: Existing Air Quality with State and Federal Standards for Lake Elsinore and Vicinity

Pollutant	California Standards	Federal Standards	Number of Days State/National Standards were Exceeded and Maximum Concentrations Recorded		
			2003	2004	2005
Ozone 1-Hr	0.09 ppm	0.12 ppm	50/7 0.154	34/2 0.130	50/7 0.149
Ozone 8-Hr	--	0.08 ppm	--/36	--/21	--/15
Carbon Monoxide 8-Hr	9.0 ppm	9.0 ppm	0/0 1.39	0/0 1.14	0/0 0.96
Nitrogen Dioxide 1-Hr	0.25 ppm	--	0/-- 0.074	0/-- 0.09	0/-- 0.065
Sulfur Dioxide 24-Hr	0.04 ppm	0.14 ppm	0/0	0/0	0/0
PM_{10} 24-Hr	50 $\mu g/m^3$	150 $\mu g/m^3$	17/0	15/0	ND/ND
$PM_{2.5}$ 24-Hr	--	65 $\mu g/m^3$	--/1	--/2	--/1
Lead 30-Day	1.5 $\mu g/m^3$	--	ND/ND	ND/ND	ND/ND
Sulfates	24-Hr	25 $\mu g/m^3$	--	N/A	N/A
Hydrogen Sulfide	1-Hr	0.03 ppm (42 $\mu g/m^3$)	--	N/A	N/A
Vinyl Chloride	24-Hr	0.01 ppm (26 $\mu g/m^3$)	--	N/A	N/A

NOTES:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ND = no data available
-- = no standard

Data collected are from Lake Elsinore monitoring station when available. When data were not available for Lake Elsinore it was collected from Perris, Riverside-Magnolia, and Riverside-Rubidoux monitoring stations.

SOURCE: CARB 2006 and SCAQMD 2006

Table 4.4-2: Description of Criteria Pollutants Under the State and Federal Clean Air Act

Criteria Pollutant	Description
Ozone (O_3)	Ozone is a photochemical oxidant and the major component of smog. While ozone in the upper atmosphere is beneficial for shielding the earth from harmful ultraviolet radiation from the sun, high concentrations at ground level cause health problems due to lung irritation. Ozone is generated by a complex series of chemical reactions between reactive organic gases/volatile organic compounds (ROG/VOCs) and nitrogen oxides (NO_x) in the presence of ultraviolet radiation. High Ozone levels result from ROG/VOCs and NO_x emissions from vehicles and industrial sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, and intense sunlight. For this reason, VOC and NO_x are considered precursors to ozone and are consequently regulated as ozone.

Table 4.4-2 *(Continued)*: Description of Criteria Pollutants Under the State and Federal Clean Air Act

Criteria Pollutant	Description
Nitrogen Oxides (NO_x)	Nitrogen oxides (NO_x) emissions are primarily generated from the combustion of fuels. NO_x includes nitric oxide (NO) and nitrogen dioxide (NO_2). Because NO converts to NO_2 in the atmosphere over time and NO_2 is more toxic than NO, NO_2 is the listed criteria pollutant. As a gas, it can penetrate deep into the lungs where tissue damage occurs. The control of NO_x is also important because of its role in the formation of ozone.
Carbon Monoxide (CO)	CO is a product of incomplete combustion, principally from automobiles and other mobile sources of pollution. CO emissions from wood-burning stoves and fireplaces can also be measurable contributors. The major immediate health effect of CO is that it competes with oxygen in the blood stream and can cause death by asphyxiation. Concentrations of CO in urban environments are usually only a fraction of those levels where asphyxiation can occur. Peak CO levels typically occur during winter months, due to a combination of higher emission rates and stagnant weather conditions, such as ground-level radiation inversions.
Sulfur Dioxide (SO_2)	SO_2 is produced when any sulfur-containing fuel is burned. Health and welfare effects attributed to SO_2 are due to the highly irritant effects of sulfate aerosols, such as sulfuric acid, which are produced from SO_2. Natural gas contains trace amounts of sulfur, while fuel oils contain much larger amounts. SO_2 can increase the occurrence of lung disease and cause breathing problems for asthmatics. It reacts in the atmosphere to form acid rain, which is destructive to lakes and streams, crops and vegetation, as well as to buildings, materials, and works of art. The entire Project Study Area is designated as attainment for sulfur dioxide. All areas in the state are considered either attainment or unclassified for sulfur dioxide.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulates in the air are caused by a combination of wind-blown fugitive or road dust particles emitted from combustion sources (usually carbon particles), and organic sulfate and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and NO_x. Particulate matter may contribute to the development of chronic bronchitis, and may be a predisposing factor to acute bacterial and viral bronchitis. Respirable particulate matter is referred to as PM_{10}, because it has a diameter size of equal to or less than 10 microns. Respirable particulate can contribute to increased respiratory disease, lung damage, cancer, premature death, reduced visibility, and surface soiling. In 1987, the US EPA adopted standards for PM_{10} and phased out the total suspended particulate (TSP) standards that had been in effect until then. The USE PA adopted standards for $PM_{2.5}$ in 1997. Fine particulates come from fuel combustion in motor vehicles and industrial sources, residential and agricultural burning, and from the reaction of NO_x, SO_x and organics.
Lead (Pb)	Lead exposure can occur through multiple pathways, including inhalation of lead dust contamination, or ingestion of lead in food, water and soil. Excessive exposure to lead can affect the central nervous system. Lead gasoline additives, non-ferrous smelters, and battery plants were historically significant contributors to atmospheric lead emissions. Legislation in the early 1970s required gradual reduction of gasoline lead content over a period of time, which dramatically reduced lead emissions from mobile and other combustion sources. Unleaded gasoline was introduced in 1975, and these controls have essentially eliminated violations of the lead standard for ambient air in urban areas. The entire MDAB is designated as attainment for lead.

Table 4.4-2 *(Continued)*: Description of Criteria Pollutants Under the State and Federal Clean Air Act

Criteria Pollutant	Description
Reactive Organic Gases (ROG) and Volatile Organic Compounds (VOC)[1]	A portion of total organic compounds or gases, excluding methane, ethane, and acetone (due to low photochemical reactivity). ROG is generally used by the California Air Resources Board and VOC is generally used by the US EPA, but both terms are interchangeable for most uses. These compounds are regionally important due to their involvement in the photochemical reaction that produces ozone.

SOURCE: CARB 2006

State

California Air Resources Board

CARB is responsible for implementing the California Clean Air Act and the federal Clean Air Act, and for regulating emissions from consumer products and motor vehicles. CARB established California Air Quality Standards for all pollutants covered by the federal NAAQS as well as standards for sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride. Standards set by CARB are generally stricter than NAAQS. The state standards are shown in Table 4.4-1 for each of the criteria pollutants. The California Clean Air Act (Assembly Bill (AB) 2595) requires attainment of state ambient air quality standards by maximum emissions reductions from vehicular and mobile sources. Attainment is to be achieved by the earliest practical date for any state designated area in non-attainment (CARB 2006).

Toxic Air Contaminants

Toxic air contaminants (TAC) are regulated because they are suspected or known to cause cancer, birth defects, neurological damage, or death. There are no established ambient air quality standards for toxic air contaminants. Instead, they are managed on a case-by-case basis depending on the quantity and type of emissions and proximity of potential receptors. Statewide and local programs identify industrial and commercial emitters of toxic air contaminants and require reduction in these emissions. There are also federal programs that require control of certain categories of TACs. The CARB recently identified diesel particulate matter as a TAC. In October 2000, the CARB released the *Risk Reduction Plan to Reduce Particulate Matter Emission from Diesel-Fueled Engines and Vehicles.* This plan identifies diesel particulate matter as the predominant TAC in California and proposed various methods for reducing diesel emissions from mobile equipment.

Regional

It is the responsibility of the SCAQMD to ensure state and federal ambient air quality standards are achieved and maintained within its jurisdiction, which includes all of the Project Study Area. The SCAQMD is required by law to produce plans indicating the methods for improving air quality as needed. Every three years the SCAQMD devises a new plan for the district. The 2003 Air Quality Management Plan (AQMP) is the latest iteration designed to satisfy requirements of both federal and state clean air laws. The AQMP outlines policies and practices for implementation to achieve attainment levels for criteria pollutants and avoid future levels that exceed the environmental standards (SCAQMD 2006).

SCAQMD Rule 403 Fugitive Dust Regulations

SCAQMD Rule 403(d)(1) prohibits construction activities generating visible dust in the atmosphere beyond the property line of the emission source. Rule 403(d)(2) requires construction activities conducted in the SCAB to use applicable best available control measures (BACMs) listed in Table 1 of Rule 403 to minimize fugitive dust emissions from each fugitive dust source type. In addition, Rule 403(d)(4) requires removal of all track-out from an active operation at the conclusion of each workday or evening shift. Track-out is defined as any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment that has been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

Construction activities with a disturbed surface area of five or more acres or with a daily import/export of 100 cubic yards or more of bulk material are required to comply with Rule 403(d)(5) to reduce the potential for vehicle track-out onto a public road. Requirements of this rule include use of a gravel pad, wheel shaker, wheel-washing system, or other equivalent measures at each vehicle egress from the site to a paved public road.

SCAQMD Construction Standards

In addition to ambient air standards, the SCAQMD has adopted thresholds of significance for construction and operational emissions, shown in Table 4.4-3.

Local Significance Thresholds

Local significance thresholds (LSTs) provide a method for assessing the significance of air quality impacts to local sensitive receptors when projects are disturbing less than five acres on any given day. LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative I-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NO_X), carbon monoxide (CO), and particulate matter less than 10 microns in aerodynamic diameter (PM_{10}). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor. For PM_{10}, LSTs were derived based on requirements in SCAQMD Rule 403 – Fugitive Dust. The LSTs for Perris Valley and Lake Elsinore Air Monitoring Areas are listed below in Table 4.4-4.

Table 4.4-3: SCAQMD Air Quality Thresholds of Significance

Air Pollutant	Project Construction (lbs/day)	Project Operation (lbs/day)
CO	550	550
VOC	75	55
NO_X	100	55
SO_X	150	150
PM_{10}	150	150
Pb	3	3

NOTE:
CO = Carbon Monoxide
VOC = Volatile Organic Compounds
NO_X = Nitrogen Oxides
SO_X = Sulfur Oxides
PM_{10} = Particulate Matter smaller than 10 microns

SOURCE: SCAQMD 2002

Table 4.4-4: Local Significance Thresholds

	Allowable Emissions (lbs/day) as a Function of Receptor Distance (Meters) from Site Boundary									
	1 Acre					2 Acre				
	NO_x and NO_2									
Receptor Area	25m	50m	100m	200m	500m	25m	50m	100m	200m	500m
Perris Valley	144	180	260	413	809	209	242	322	467	847
Lake Elsinore	230	288	415	661	1294	334	388	505	747	1356
	CO									
Perris Valley	418	620	1,230	3,158	13,913	591	872	1,552	3,635	14,734
Lake Elsinore	650	964	1,913	4,913	21,425	920	1,357	2,415	5,655	22,898
	PM_{10}									
Perris Valley	4	11	99	186	274	6	19	107	195	283
Lake Elsinore	4	11	99	186	274	6	19	107	195	283
NOTE: m = meters										

SOURCE: SCAQMD 2002

4.4.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

4.4.4 IMPACT ANALYSIS

Impact Summary

Air quality impacts associated with the Proposed Project would be limited to fugitive dust and combustion emissions resulting from construction. Impacts related to periodic maintenance would be negligible, as only a few vehicles would be needed for short periods of time. Impacts to air quality would not be significant with the implementation of SCE Proposed Measures.

Construction

Emissions resulting from construction of the Proposed Subtransmission Line Project and telecommunications line, access roads, pole removal, and installation would include the following.

- Emissions attributed to vehicle transport of workers to and from the Project Study Area
- Dust from road grading and pole site boring
- Emissions from construction vehicles operating on site
- Trucks hauling materials (e.g. concrete, poles, and conductors) to the work site
- Dump trucks hauling away construction debris such as excavated soil and old poles that are being replaced

Construction would generate dust and exhaust emissions. The SCAQMD regional criteria and the Local Significance Thresholds were considered during the impact analysis. Table 4.4-5 compares construction emissions for the Proposed Project with local significance thresholds.

Standards and Plans

Regional. Construction emissions, summarized in Table 4.4-5 below would remain below the regional significance thresholds. Calculations presented in this report (Appendix B) were performed by identifying days during which the largest number of construction activities would occur simultaneously. Thus, the numbers in Table 4.4-5 are the peak values, and would likely occur only during a fraction of the entire construction timeframe; during other days, emissions would be less than those calculated. The emissions would be temporary and would cease after construction is complete.

Sensitive Receptors. Most of the Proposed Subtransmission Line Route would be located in rural or suburban areas that would not be located in close proximity to sensitive receptors. However, portions of several Proposed Subtransmission Line segments are within 330 feet of sensitive receptors. Table 4.4-4 shows LSTs for the Project Study Area for all criteria pollutants. The maximum local emissions would equal the sum of emission from combustion equipment and dust from grading. For PM_{10}, the maximum likely emissions of 15.31 lbs/day would be less than the LST of 99 lbs/day for receptors at 100 meters from a 1-acre construction, which is the most restrictive standard. Emissions of other pollutants would be below the relevant thresholds and impacts from construction emissions would be less than significant.

Sensitive receptors include schools, residential areas, and other sensitive uses, such as parks. LSTs are intended to minimize the local effects to sensitive receptors. The Proposed Project would not exceed LST values for the area during construction. Sensitive receptors are not located within 100 meters of the Proposed Subtransmission Line Route and air quality impacts to sensitive receptors from the Proposed Project would not be significant.

Odor. Exhaust from construction vehicles may temporarily create odors from the combustion of fuel. The level of odoriferous emissions would likely not cause a perceptible odor to any sensitive receptors. Any odors that are perceptible would be temporary. Impacts associated with odors would not be significant.

Operation

Once construction is complete, operation emissions would result from emissions from vehicles that would be necessary for periodic inspection, maintenance, and repair. No stationary emissions sources would be associated with the Proposed Project. Emissions from operation would not be significant.

Table 4.4-5: Total Worst-Case Construction Emissions Estimates

Emission Category	Total Estimated Project Emissions (lbs/day)				
	CO	NO_x	PM_{10}	SO_x	VOC
Combustion Emissions from Construction	39.11	93.83	4.81	18.15	10.12
Fugitive Dust from Roadways			78.90		
Fugitive Dust from Grading			11.5		
Total Emissions	39.11	93.83	95.21	18.15	10.12
SCAB Significance Thresholds	550	100	150	150	75
Significant	No	No	No	No	No

NOTES:
(1) All emissions will occur in 2008
(2) Refer to Appendix for calculations

SOURCE: MHA 2006

4.4.5 SCE PROPOSED MEASURES

SCE proposes standard air quality control measures indicated below to reduce the impacts of air pollutant emissions from construction activities.

AIR-SCE-1: All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.

AIR-SCE-2: All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

AIR-SCE-3: When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.

AIR-SCE-4: Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

AIR-SCE-5: Use of clean-burning, on-road and off-road diesel engines. Where feasible, heavy-duty diesel powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) would be utilized.

AIR-SCE-6: All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.

AIR-SCE-7: Construction workers would carpool when possible.

AIR-SCE-8: Vehicle idling time would be minimized.

AIR-SCE-9: Limit traffic speeds on unpaved roads to 15 mph.

AIR-SCE-10: CARB-certified ultra low-sulfur diesel (ULSD) fuel containing 15 ppm sulfur or less shall be used in all diesel-powered construction equipment.

AIR-SCE-11: All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers that the use of such devices is not practical for specific engine types. Equipment properly registered under and in compliance with CARB's Statewide Portable Equipment Registration Program is considered to comply with this measure.

AIR-SCE-12: All on-road construction vehicles working within California shall meet all applicable California on-road emission standards and shall be licensed in the State of California. This does not apply to construction worker personal vehicles.

4.4.6 MITIGATION MEASURES

Impacts to air quality would be less than significant, and therefore, no mitigation is required.

4.4.7 ALTERNATIVES

Construction of alternative segments would have virtually identical air quality impacts as the Proposed Project. All alternative segments would require the same construction equipment and protocol with the exception of individual segments that may require varying amounts of road grading. This would not change the daily worst-case emissions factors. All SCE Proposed Measures would apply to the alternative segments.

4.4.8 REFERENCES

AQMD. 2003. Final Localized Significance Threshold Methodology, Appendix C: Mass Rate LST Look-up Table.

California Air Resources Board (CARB). 2006. Website: www.arb.ga.gov. Accessed May 20, 2006.

CityData. 2006. Website: www.city-data.com. Accessed April 20, 2006.

SCAQMD (South Coast Air Quality Management District). 2006. Website: www.aqmd.gov. Accessed April 19, 2006.

WRCC (Western Regional Climate Center). 2006. Website: www.wrcc.dri.edu. Accessed March-2006.

4.5 Biological Resources

4.5.1 ENVIRONMENTAL SETTING

Background Research

This section provides an overview of methods used to evaluate biological resources in the Project Study Area for the Valley-Ivyglen 115 kV Subtransmission Line Project. Evaluation of botanical and wildlife resources began with review of pertinent literature and databases, and was followed by field surveys. The following resources were used in background research and during field surveys.

- Recent (2006) Aerial Photos
- Land Use Maps (County of Riverside, Cities of Lake Elsinore and Perris)
- California Natural Diversity Database (CNDDB 2006)
- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2006)
- Draft Biological Resources Report Valley-Ivyglen Transmission Line Project Riverside County, California (Entrix, Inc. 2006)
- Biological Technical Report for the Valley-Ivyglen Transmission Line Project (AMEC 2006)
- The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) (County of Riverside 2003)
- Soil Survey of Western Riverside Area California (USDA 1971)

Survey Methods

Biological surveys and habitat suitability assessments were conducted within the proposed and alternative subtransmission line corridors (AMEC 2006). Surveys were conducted along the entire length of each alternative route segment considered, encompassing approximately 58 miles of surveys.

Vegetation Mapping Methods

Vegetation mapping of the Project Study Area was conducted by visual examination of the route segment survey corridors. The purpose of these surveys was to identify vegetation and land cover within the Project Study Area. Vegetation communities along each segment were noted on orthorectified aerial photographs of the Project Study Area and were described according to the MSHCP Conservation Area descriptions (County of Riverside 2003). Dominant plant species and community structure were also recorded and the acreages of all vegetation communities in the study corridor were delineated.

Special-status Plant Species Survey Methods

Botanical surveys of the subtransmission line segments were conducted following the California Department of Fish and Game (CDFG) *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2006) and the CNPS *Botanical Survey Guidelines* (CNPS 2001). Field surveys were scheduled to coincide with the season of year when observations of sensitive plant species were most likely to occur. All vascular plant species observed during surveys of the segments were documented (Appendix C). Sensitive plant species encountered were mapped and added to the GIS database.

Special-status Wildlife Habitat Assessment Methods

Reconnaissance-level surveys were conducted to characterize wildlife habitat types and evaluate the potential for occurrence of special-status wildlife species in the Project Study Area (Table 4.5-2). These surveys were done in conjunction with vegetation mapping and special-status plant species surveys. The Project Study Area was traversed by foot and vehicle to survey each vegetation community and for evidence of wildlife presence. All wildlife and wildlife signs, including tracks, fecal material, nests, and vocalizations were noted (Appendix C). All sensitive wildlife species encountered were mapped and added to the GIS database.

Habitat on each segment was also specifically assessed for burrowing owl presence, use, and potential use in compliance with the MSHCP. Burrowing owl habitat assessment surveys were conducted according to the CDFG *Burrowing Owl Consortium Guidelines* (CDFG 1993) and the *Burrowing Owl Survey Instructions for the Western Riverside Multiple Species Habitat Conservation Plan Area* (County of Riverside 2006).

Areas with potential burrowing owl habitat, including grasslands, sage scrub, and low growing vegetation, were surveyed for potential owl burrows and owls. These surveys included ground squirrel and ground squirrel burrow surveys. Biologists walked areas of potential habitat while searching for burrowing owls, potential and active burrows, and owl signs such as feathers, pellets, and prey items.

Surveys were conducted to allow 100 percent visual coverage of potential habitat. The survey area included a 500-foot buffer area from the centerline of each segment. The guidelines require that, if the project site contains burrows that could be used by burrowing owls, survey efforts should be directed towards determining owl presence.

<u>Habitats</u>

Overview of Project Study Area Habitats

The Proposed Project is located in southwestern Riverside County. The alternative route segments evaluated traverse through areas of unincorporated Riverside County, and the cities of Lake Elsinore and Perris, California.

Topography in the Project Study Area is generally gentle rolling hills. The Project Study Area contains a combination of agricultural, municipal, private, and reserve land, most with previous disturbance.

The Project Study Area is located within a Mediterranean climate region consisting of warm, dry summers and mild, wet winters. In summer, temperatures often reach 100° F and winter temperatures fall to the 30s, with an occasional freeze. Average annual temperature ranges are fairly moderate for the area, ranging from 49.3° F to 79.5° F. Average total precipitation for the area is approximately 10 to 15 inches per year (Western Regional Climate Center 2005).

Vegetation Communities

Vegetation communities and land cover types in the Project Study Area are primarily coastal sage scrub, grasslands, agriculture, and developed disturbed land (ruderal habitat). Additional plant communities found within the study area include woodlands and forest, Riversidean alluvial fan sage scrub, riparian scrub/woodland/forest, vernal pools, and open water. Previous agriculture, grazing, fire suppression, and invasion of nonnative plant species have contributed to the disturbed condition of many vegetation communities in the study area.

Vegetation communities, which were identified in the Project Study Area, are described below. These communities are classified using the plant community definitions in the Western Riverside

County MSHCP, which is based on the vegetation communities presented in the *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986).

Coastal Sage Scrub

In western Riverside County, coastal sage scrub is found both in large contiguous blocks scattered throughout the County as well as integrated with chaparral and grasslands. Coastal sage scrub is dominated by a characteristic suite of low-statured, aromatic, drought-deciduous shrubs, and subshrub species. Composition varies substantially depending on physical circumstances and the successional status of the vegetation community. However, characteristic species include California sagebrush, California buckwheat, laurel sumac, California encelia, and several species of sage. Other common species include brittlebush, lemonadeberry, sugarbush, yellow bush penstemon, Mexican elderberry, sweetbush, boxthorn, shore cactus, coastal cholla, tall prickly-pear, and species of Dudleya.

Grasslands

Two general types of grasslands occur in western Riverside County: (1) nonnative dominated, primarily annual grassland (non-native grassland); and (2) native dominated perennial grassland (valley and foothill grassland).

Valley and foothill grasslands typically contain the perennial bunch grasses purple needlegrass and foothill needlegrass. Lesser amounts of other native grasses, such as onion grass, wild rye, Muhly, and cane bluestem, may also be present. In addition, non-native grasses or forbs may be present to varying degrees. Native herbaceous plants commonly found within valley and foothill grasslands include yellow fiddleneck, common calyptridium, suncup, Chinese houses, California poppy, tarweed, coast goldfields, common tidy-tips, lupine, popcornflower, blue dicks, muilla, blue-eyed grass, and dudleya (County of Riverside 2003).

Nonnative grasslands are likely to be dominated by several species of grasses that have evolved to persist in concert with human agricultural practices: slender oat, wild oat, fox tail chess, soft chess, ripgut grass, barley, rye grass, English ryegrass, rat-tail fescue, and Mediterranean schismus (County of Riverside 2003).

Agriculture

Agricultural lands within the MSHCP boundary include areas occupied by dairies and livestock feed yards or areas that have been tilled for use as croplands or groves/orchards (County of Riverside 2003).

Developed or Disturbed Land

Developed or disturbed lands consist of areas that have been disced, cleared, or otherwise altered. Developed lands may include roadways, existing buildings, and structures. Disturbed lands may include ornamental plantings for landscaping, escaped exotics, or ruderal vegetation dominated by non-native, weedy species such as mustard (*Brassica* sp.), fennel, tocalote, and Russian thistle (County of Riverside 2003).

Woodlands and Forest

Woodland and forest vegetation communities in western Riverside County are dominated by Engelmann oak, coast live oak, canyon live oak, interior live oak, and black oak in the canopy, which may be continuous to intermittent or savannah-like. Four-needle pinyon, single-leaf pinyon pine, and California juniper are the canopy species of peninsular juniper woodland that most commonly occur in Southern California, forming a scattered canopy from 3 to 15 m tall (County of Riverside 2003).

Many understory plants in oak woodlands are shade tolerant and include wild blackberry, snowberry, California walnut, California-lilac, lemonadeberry, sugar bush, currant, toyon, California bay, Engelmann oak, manzanita, laurel sumac, poison-oak and herbaceous plants including bracken fern, polypody fern, fiesta flower and miner's lettuce. This vegetation community can occur on all aspects, stream sides, canyon bottoms, and flat to very steep topography (County of Riverside 2003).

Riversidean Alluvial Fan Sage Scrub

Riversidean alluvial fan sage scrub occurs throughout many drainages within western Riverside County. Riversidean alluvial fan sage scrub is a Mediterranean shrubland type that occurs in washes and on gently sloping alluvial fans. Alluvial scrub is made up predominantly of drought-deciduous soft-leaved shrubs, but with significant cover of larger perennial species typically found in chaparral. Scalebroom generally is regarded as an indicator of Riversidean alluvial scrub. In addition to scalebroom, alluvial scrub typically is composed of white sage, redberry, California buckwheat, Spanish bayonet, California croton, cholla, tarragon, yerba santa, mule fat, and mountain-mahogany. Annual species composition has not been studied but is probably similar to that found in understories of neighboring shrubland vegetation. Two sensitive annual species, slender-horned spineflower and Santa Ana River woollystar are endemic to alluvial scrub vegetation in western Riverside County (County of Riverside 2003).

Riparian Forest, Woodland, and Scrub

Riparian vegetation, including forest, woodland, and scrub subtypes, is distributed in waterways and drainages throughout much of western Riverside County. Depending on community type, a riparian community may be dominated by any of several trees/shrubs, including box elder, bigleaf maple, coast live oak, white alder, sycamore, Fremont's cottonwood, California walnut, Mexican elderberry, wild grape, giant reed, mule fat, tamarisk or any of several species of willow. In addition, various understory herbs may be present, such as saltgrass, and poison oak (County of Riverside 2003). Subcategories of these habitat types within the Project Study Area include Mule Fat Scrub, Southern Cottonwood/Willow Riparian, and Southern Sycamore/Alder Riparian Woodland.

Meadows and Marshes

Meadow and marsh vegetation communities occur in both flowing and still water. This vegetation community includes cattails, bulrushes, sedges, spike rushes, flatsedges, smartweed, watercress, and yerba mansa, and also contains perennial and biennial herbs and grasses. Rooted aquatic plant species with floating stems and leaves also may be present, such as pennywort, water smartweed, pondweeds, and water-parsley (County of Riverside 2003).

Open Water

Open water habitat typically is unvegetated due to a lack of light penetration. However, open water may contain suspended organisms such as filamentous green algae, phytoplankton (including diatoms), and desmids. Floating plants such as duckweed, water buttercup, and mosquito fern also may be present. Open water includes inland depressions, ponds, lakes, reservoirs, and stream channels containing standing water and often occurs in conjunction with riparian and upland vegetation communities. Depth may vary from hundreds of feet to a few inches (County of Riverside 2003).

Table 4.5-1 describes the habitat types that are present along each of the proposed segments while Figures 4.5-1 to 4.5-3 illustrates the vegetation communities that are present along each proposed segment.

Table 4.5-1: Valley-Ivyglen Transmission Line Project Vegetation Communities

Routes	Coastal Sage Scrub	Nonnative Grassland	Agricultural Land	Developed-Disturbed Land	Woodlands and Forest	Riversidean Alluvial Fan Sage Scrub	Riparian Scrub, Woodland Forest	Meadows and Marshes
Proposed Route								
Segment E-1	✓	✓		✓			✓	
Segment C-1	✓	✓	✓	✓			✓	
Segment C-3	✓	✓		✓		✓		
Segment C-4	✓	✓		✓		✓	✓	
Segment C-6	✓	✓		✓			✓	✓
Segment W-1	✓	✓	✓	✓			✓	
Segment W-4	✓	✓		✓	✓	✓	✓	
Segment W-8	✓							
Segment W-10	✓	✓		✓	✓	✓	✓	

SOURCE: MHA 2006

Special Status Species

Plants

A number of special-status plant species occur or have the potential to occur in the Project Study Area (Table 4.5-2). According to the CNPS *Electronic Inventory of Rare or Endangered Vascular Plants of California* (CNPS 2006) and the CDFG *RareFind3* database, 52 special-status plant species are known to occur or have the potential to occur in the general vicinity of the Proposed Project. Table 4.5-2 identifies these species and provides additional information on special-status species, such as habitat needs, flowering periods, potential for occurrence within the Project Study Area, and listing status. Species documented in the project vicinity or determined to have moderate or high potential to occur in the Project Study Area are described further in Appendix C. Figures 4.5-1 to 4.5-3 show locations of special-status plant species in the project vicinity that were identified during field surveys and locations of occurrences that are reported in the CNDDB.

Wildlife

A number of special status wildlife species occur or have the potential to occur in the Project Study Area (Table 4.5-3). Species documented in the project vicinity or determined to have moderate or high potential to occur in the Project Study Area are described in Appendix C. Figures 4.5-1 to 4.5-3 show locations of special-status wildlife species in the project vicinity that are reported in the CNDDB or were observed during field surveys.

Sensitive Biological Resources Documented in the Project Study Area

This section summarizes sensitive biological resources that were documented in the Project Study Area based on field surveys.

Subtransmission Line

East Section (City of Perris Area)

Segment E-1. The majority of Segment E-1 passes through nonnative grassland, disturbed coastal sage scrub, and developed habitats (Figure 4.5-1 and 4.5-2). Portions of this segment are also vegetated by riparian habitat that is associated with the San Jacinto River.

The following special status plant and animal species are known to occur or have historically occurred near or along Segment E-1:

Bells' sage sparrow (Amphispiza belli belli)
The CNDDB identifies an occurrence of this species adjacent to Segment E-1 within disturbed coastal sage scrub habitat. Other areas along this segment that are occupied by semi-open coastal sage scrub habitat may also support this species.

Burrowing owl *(Athene cunicularia)*
Although no burrowing owls were observed during recent biological surveys, the CNDDB recognizes historic occurrences of this species along Segment E-1 within disturbed/developed and nonnative grassland habitats. Other areas along this segment that are occupied by open, nonnative grassland and agriculture fields may additionally support this species.

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
A CNDDB historic occurrence of this species is located adjacent to Segment E-1 within disturbed coastal sage scrub habitat. Other areas along this segment that are occupied by open coastal scrub on medium to steep slopes may also support this species.

Stephens' kangaroo rat *(Dipodomys stephensi)*
Stephens' kangaroo rat is a federally listed endangered, state listed threatened, and MSHCP Covered Species. The CNDDB identifies a historic occurrence of this species along Segment E-1 within nonnative grassland habitat. Other areas along this segment that are occupied by open grasslands or sparse scrublands on gentle slopes may additionally support this species.

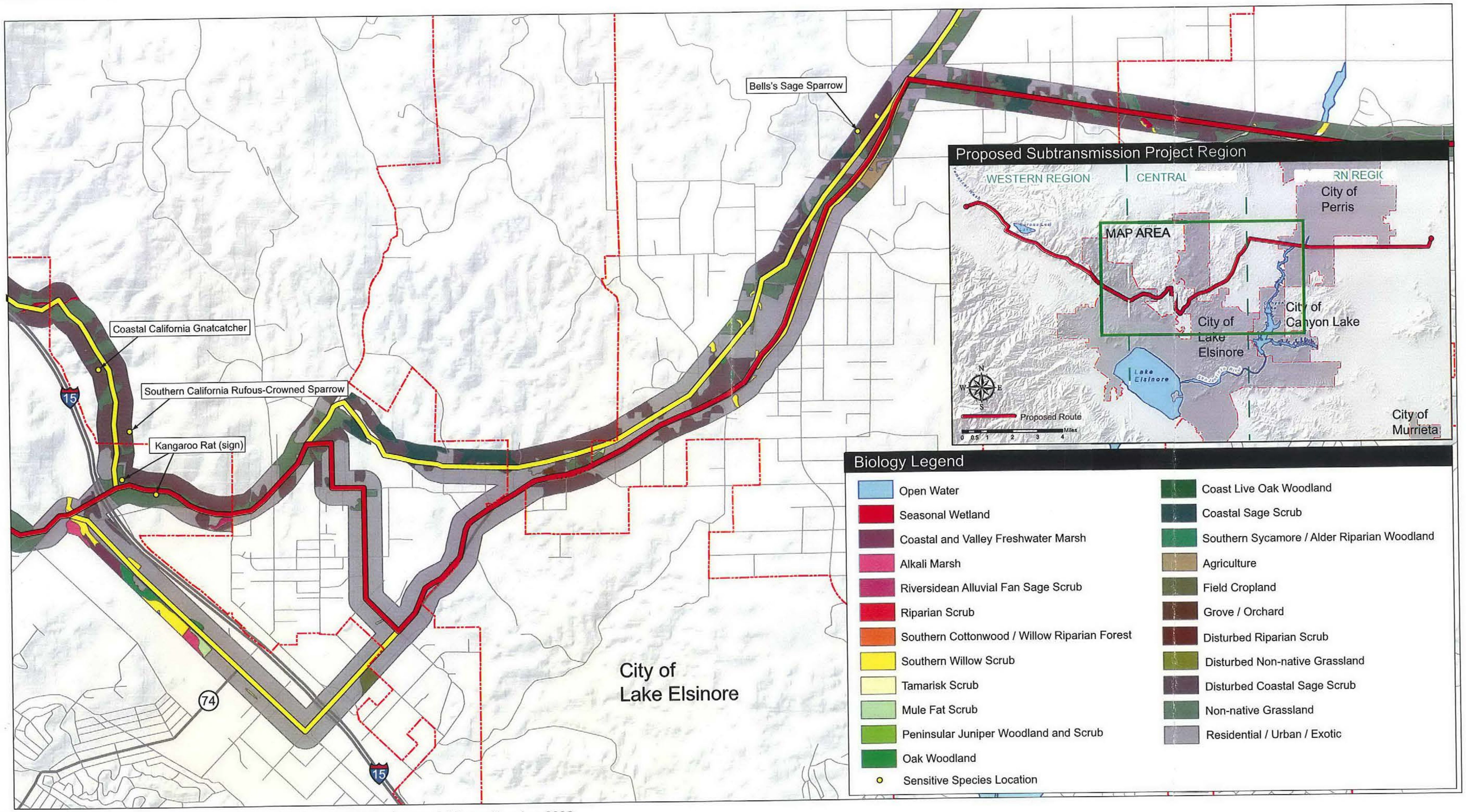
Segment C-1. Segment C-1 mainly passes through ruderal, developed, and agricultural properties, in addition to some disturbed coastal sage scrub (Figure 4.5-2). This segment also passes directly through a riparian habitat that is associated with a small unnamed intermittent drainage.

The following special status plant and wildlife species are known to occur or have historically occurred near or along Segment C-1:

Bells' sage sparrow
Biologists observed Bell's sage sparrow along Segment C-1 within disturbed coastal sage scrub habitat. Other areas along this segment that are occupied by semi-open coastal sage scrub habitat may also support this species (AMEC 2006).

Burrowing owl
Although no burrowing owls were observed during recent biological surveys, the CNDDB recognizes a historic occurrence of this species near Segment C-1 within nonnative grassland habitat. Other areas along this segment that are occupied by open, nonnative grassland and agriculture fields may additionally support this species.

Figure 4.5-2: Vegetation Communities and Sensitive Species Occurrences



SOURCE: AMEC 2006, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Alternative Routes
- Substation
- Interstate Highway
- State Route
- Road
- City Boundary

0 0.25 0.5 1 1.5 2 Miles

N W E S

MHA ENVIRONMENTAL CONSULTING, INC.

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

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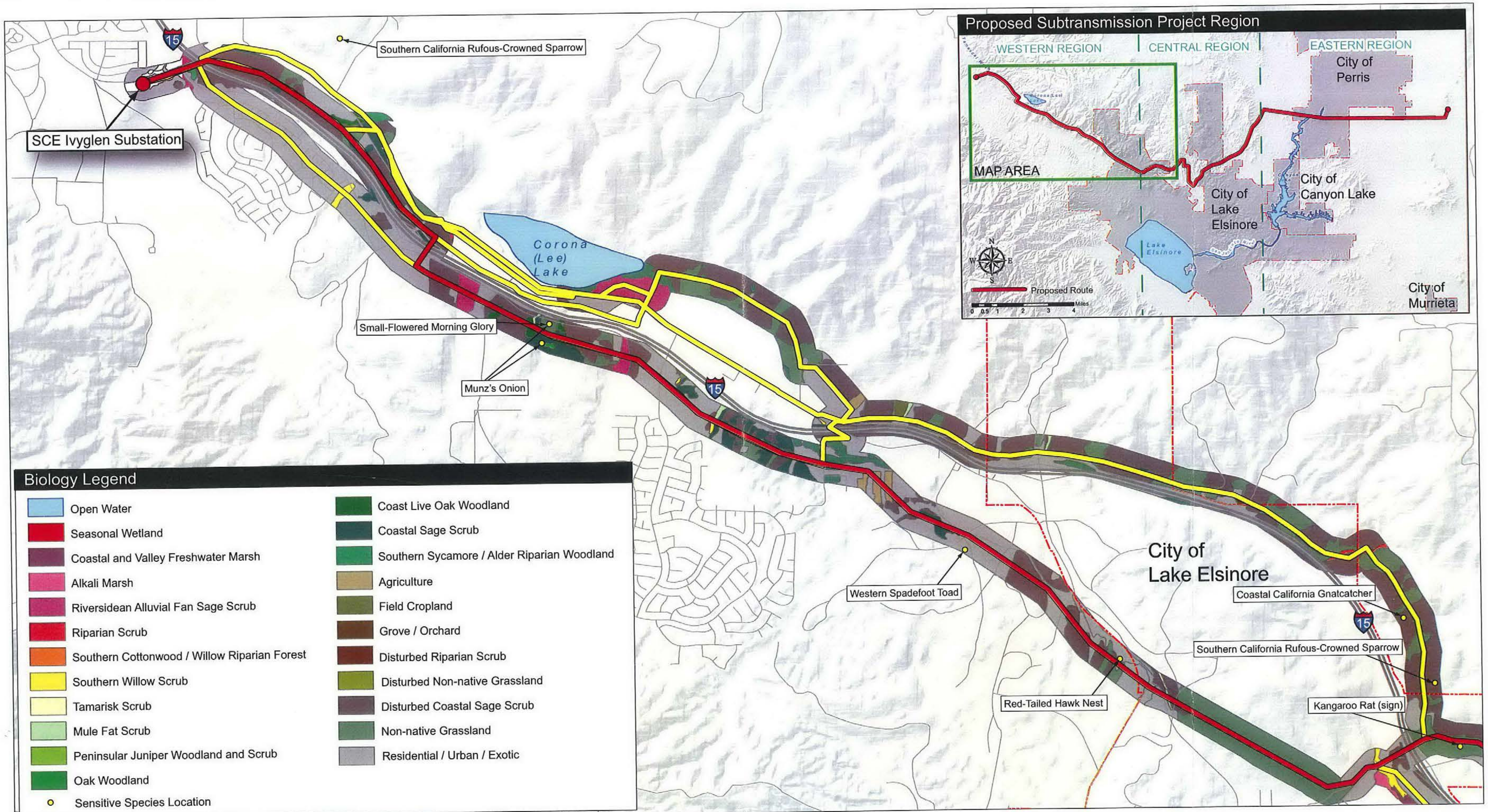
Figure 4.5-3: Vegetation Communities and Sensitive Species Occurrences



SOURCE: AMEC 2006, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND
Proposed Route
Alternative Routes
Substation
Interstate Highway
State Route
Road
City Boundary

0 0.25 0.5 1 1.5 2 Miles

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Table 4.5-2: Special Status Plant Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Abronia villosa var *aurita*	Chaparral Sand-Verbena	1B.1	Jan-Sept	Chaparral, coastal scrub, desert dunes/sandy	High: CNDDB points occur in the study area
Allium munzii	Munz's Onion	1B.1 FE ST MSHCP Narrow Endemic	Mar-May	Chaparral, Cismontane, woodland coastal scrub, Pinyon/juniper woodland, valley and foothill grassland/ mesic, clay	High: Identified in the study area
Ambrosia pumila	San Diego Ambrosia	1B.1 FE MSHCP Narrow Endemic	May-Sept	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/often in disturbed areas	High: CNDDB record within the study area
Atriplex coronata var *notatior*	San Jacinto Valley Crownscale	1B.1 FE MSHCP Criteria Species	Apr-Aug	Playas, valley and foothill grassland (mesic), vernal pools/alkaline	High: Alkaline soils exist within the Project Study Area
Atriplex coulteri	Coulter's Saltbush	1B.2 MSHCP Covered Species	Mar-Oct	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland/alkaline or clay	High: Alkaline soils exist within the Project Study Area
Atriplex pacifica	South Coast Saltscale	1B.2 MSHCP Covered Species	Mar-Oct	Coastal bluff scrub, coastal dunes, coastal scrub, playas	Moderate: Suitable habitat exists
Atriplex parishii	Parish's Brittlescale	1B.1 MSHCP Criteria Species	Jun-Oct	Coastal scrub, playas, vernal pools	Moderate: Suitable habitat exists
Atriplex serenana var. *davidsonii*	Davidson's Saltscale	1B.2 MSHCP Criteria Species	Apr-Oct	Coastal bluff scrub, coastal scrub/alkaline	High: Alkaline soils exist within the Project Study Area
Brodiaea filifolia	Thread-Leaved Brodiaea	1B.1 FT SE MSHCP Criteria Species	Mar-Jun	Chaparral, Cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools/often clay	High: CNDDB record within the Project Study Area, clay soils exist near Pacific Clay property
California macrophylla	Round-Leaved Filaree	2.1 MSHCP Criteria Species	Mar-May	Cismontane woodland, valley and foothill grassland/clay	High: CNDDB record within the Project Study Area
Calochortus plummerae	Plummer's Mariposa Lily	1B.2 MSHCP Covered Species	May-July	Chaparral, Cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland/granitic, rocky	Moderate: Suitable habitat exists

Table 4.5-2 *(Continued)*: Special Status Plant Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Calochortus weedii var. *intermedius*	Intermediate Mariposa Lily	1B.2 MSHCP Covered Species	May-July	Chaparral, coastal scrub, valley and foothill grassland/rocky	Moderate: suitable habitat exists
Centromadia pungens ssp. *laevis*	Smooth Tarplant	1B.1 MSHCP Criteria Species	Apr-Sept	Chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland	High: identified within study area
Chorizanthe parryi var. *parryi*	Parry's Spineflower	3.2 MSHCP Covered Species	Apr-Jun	Chaparral, coastal scrub/sandy or rocky openings	Moderate: suitable habitat exists
Chorizanthe polygonoides var. *longispina*	Long-Spined Spineflower	1B.2 MSHCP Covered Species	April-July	Chaparral, coastal scrub, meadows, valley and foothill grassland/often clay	High: clay soils within study area
Convolvulus simulans	Small-Flowered Morning Glory	4.2 MSHCP Covered Species	Mar-July	Chaparral (openings), coastal scrub, valley and foothill grassland/clay, serpentinite seeps	High: clay soils exist near Pacific Clay property
Dodecahema leptoceras	Slender-Horned Spineflower	1B.1 FE SE MSHCP Narrow Endemic	Apr-Jun	Chaparral, Cismontane woodland, coastal scrub/(alluvian fan)/sandy	High: alluvial fan present
Dudleya multicaulis	Many-Stemmed Dudleya	1B.2 MSHCP Narrow Endemic	Apr-Jul	Chaparral, coastal scrub, valley and foothill grassland/often clay	High: clay soils exist near Pacific Clay property
Harpagonella palmeri	Palmer's Grapplinghook	4.2 MSHCP Covered Species	Mar-May	Chaparral, coastal scrub, valley and foothill grassland/clay	High: clay soils exist near Pacific Clay property
Horkelia cuneata ssp. *puberula*	Mesa Horkelia	1B.1	Feb-Sept	Chaparral, Cismontane woodland, coastal scrub/sand, gravelly	Moderate: suitable habitat exists
Lepidium virginicum var. *robinsonii*	Robinson's Pepper-Grass	1B.2 MSHCP Covered Species	Jan-July	Chaparral, coastal scrub	Moderate: suitable habitat exists
Myosurus minimus ssp. apus	Little Mousetail	3.1 MSHCP Criteria Species	Mar-Jun	Valley and foothill grassland, vernal pools (alkaline)	Moderate: mesic alkaline soils present within study area
Navarretia fossalis	Spreading Navarretia	1B.1/FT MSHCP Narrow Endemic	Apr-Jun	Chenopod scrub, marsh and swamp (assorted shallow freshH20), alkali playas, vernal pools	Moderate: mesic alkaline soils present within study area
Navarretia prostrata	Prostrate Navarretia	1B.1 MSHCP Criteria Species	Apr-July	Coastal scrub, meadows, valley and foothill grassland, (alkaline), vernal pools/mesic	Moderate: mesic alkaline soils present within study area

Table 4.5-2 *(Continued)*: Special Status Plant Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Blooming Period	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Senecio aphanactis	Rayless Ragwort	2.2	Jan-Apr	Chaparral, Cismontane woodland, coastal scrub/alkaline	Moderate: suitable habitat exists
Sibaropsis hammittii	Ham mitt's Clay-Cress	1B.2	Mar-Apr	Chaparral, valley and foothill grassland	Moderate: suitable habitat exists
Sidalcea neomexicana	Salt Spring Checkerbloom	2.2 MSHCP Covered Species	Mar-Jun	Chaparral, coastal scrub, lower montane coniferous forest, Mojave desert scrub, playas/alkaline, mesic	High: alkaline soils within the study area
Sphaerocarpos drewei	Bottle Liverwort	1B.1	n/a	Chaparral, coastal scrub/opening, soil	Moderate: suitable habitat exists
Symphyotrichum defoliatum	San Bernardino Aster	1B.2	Jul-Nov	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows, marsh and swamp, valley and foothill grassland (vernally mesic)/near ditches, streams, springs	Moderate: suitable habitat exists
Tetracoccus dioicus	Parry's Tetracoccus	1B.2 MSHCP Covered Species	Apr-May	Chaparral, coastal scrub	Moderate: suitable habitat exists
Trichocoronis wrightii var. *wrightii*	Wright's Trichocoronis	1B.1 MSHCP Narrow Endemic	May-Sept	Meadows, marsh and swamp riparian forest, vernal pools/alkaline	High: alkaline soils within the study area

NOTE:

Federal Status

FE = Federal Endangered

FT = Federal Threatened

State/CDFG Status

SE = State Endangered

ST = State Threatened

CNPS Status

1B = Rare or endangered in California and elsewhere

2 = Rare or endangered in California, but more common elsewhere

3 = Review List-Plant for which we need more information

4 = Plants with limited Distribution-Watch List

.1 = Seriously endangered in California

.2 = Fairly endangered in California

.3 = Not very endangered in California

County Status

MSHCP Covered Species = Covered species under County of Riverside Multiple Species Habitat Conservation Plan

MSHCP Narrow Endemic = Listed as a narrow endemic under County of Riverside Multiple Species Habitat Conservation Plan

MSHCP Criteria Species = Species which need to be surveyed for within specific County of Riverside MSHCP Criteria Areas

Table 4.5-3: Special Status Wildlife Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Invertebrates				
Euphydryas editha quino	Quino Checkerspot Butterfly	FE, MSHCP Covered Species	Grasslands, sage scrub, chaparral with open areas	Moderate: has potential to occur within study area
Amphibians				
Bufo californicus	Arroyo Toad	FE, CSC, MSHCP Covered Species	Open, sandy or gravelly, riparian breeding areas and adjacent upland habitat within approximately 1 kilometer of breeding areas	Moderate: has potential to occur within study area
Scaphiopus hammondii	Western Spadefoot Toad	CSC, MSHCP Covered Species	Ephemeral pools, grassland, scrub, chaparral	High: present within study area
Reptiles				
Aspidoscelis (Cnemidophorus) hyperythra beldingi	Orange-Throated Whiptail	CSC, MSHCP Covered Species	Open sage scrub, chaparral, sandy wash, woodland	High: present within study area
Aspidoscelis (Cnemidophorus) tigris stejnegeri	Coastal Western Whiptail	CNDDB: G5T3T4S2S3, MSHCP Covered Species	Dense chaparral and sage scrub, especially around sandy washes and streambeds	Moderate: has potential to occur within study area
Charina (Lichanura) trivirgata roseofusca	Coastal Rosy Boa	CNDDB: G4G5S3S4	Dry, rocky brushlands and arid habitats, prefers rock outcrops	Moderate: has potential to occur within study area
Clemmys marmorata pallida	Southwestern Pond Turtle	CSC, MSHCP Covered Species	Streams, ponds, upland within 400 meters of ponds	Moderate: has potential to occur within study area in the vicinity of ponded water
Coleonyx variegates abbottii	San Diego Banded Gecko	CNDDB: G5T3T4S2S3, MSHCP Covered Species	Coastal sage scrub and chaparral, prefers rock outcrops	Moderate: has potential to occur within study area
Crotalus ruber ruber	Northern Red Diamond Rattlesnake	CSC, MSHCP Covered Species	Scrub, chaparral, riparian	Moderate: has potential to occur within study area
Phrynosoma coronatum (blainvillei)	Coast (San Diego) Horned Lizard	CSC, MSHCP Covered Species	Sage scrub, chaparral, forests	High: has potential to occur within study area
Salvadora hexalepis virgultea	Coast Patch-Nosed Snake	CSC MSHCP Covered Species	Open habitats, brush	Moderate: has potential to occur within study area
Thamnophis hammondi	Two-Striped Garter Snake	CSC MSHCP Covered Species	Creeks and ponds, nearby upland habitats	Moderate: has potential to occur within study area
Birds				
Accipiter cooperii	Cooper's Hawk	CSC (nesting), MBTA, MSHCP Covered Species	Oak woodland, eucalyptus, mature riparian forest	High: present within study area, with potential to nest in study area
Accipiter striatus velox	Sharp-Shinned Hawk	CSC, MSHCP Covered Species	Grasslands, coastal sage scrub	Moderate: has potential to occur within study area as a winter migrant
Agelaius tricolor	Tri-Colored Blackbird (Nesting Colony)	FBCC, CSC, MBTA, MSHCP Covered Species	Marshes, fields	Moderate: has potential to occur within study area
Aimophila ruficeps canescens	Southern California Rufous-Crowned Sparrow	CSC, MBTA, MSHCP Covered Species	Open coastal sage scrub	High: present within study area, with potential to nest in study area

Table 4.5-3 *(Continued)*: Special Status Wildlife Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Amphispiza belli belli	Bell's Sage Sparrow	FBCC, CSC, MBTA, MSHCP Covered Species	Coastal sage scrub, chaparral	High: present within study area, with potential to nest in study area
Aquila chrysaetos	Golden Eagle	FBCC, BEPA, CSC, CFP, MBTA, MSHCP Covered Species	Grasslands, trees, cliffs, scrub	Moderate: has potential to forage within study area
Athene cunicularia	Burrowing Owl	FSC, FBCC, CSC (Burrow sites), MBTA, MSHCP Covered Species	Open land, old ground squirrel burrows	Moderate: has potential to occur within study area, with potential to nest in study area (i.e., ground squirrel burrows present)
Buteo regalis	Ferruginous Hawk	FBCC, CSC (wintering), MBTA, MSHCP Covered Species	Grasslands	Moderate: uncommon winter visitor could forage in study area
Circus cyaneus	Northern Harrier	CSC (nesting), MBTA, MSHCP Covered Species (breeding)	Grasslands, marshes, open habitats	Moderate: has potential to occur within study area, with potential nesting habitat present
Elanus leucurus	White-Tailed Kite	CFP, MBTA, MSHCP Covered Species	Open habitats with perches	High: present within study area, with potential nesting habitat present
Empidonax traillii (extimus)	Willow Flycatcher (Southwestern)	FE (*extimus*), SE (all subspecies), MBTA, MSHCP Covered Species (*extimus*)	Well developed riparian woodland, willow meadows	Moderate: has potential to occur within study area, with potential nesting habitat present and potential to nest in study area
Eremophila alpestris actia	California Horned Lark	CSC, MBTA, MSHCP Covered Species	Open habitats, bare dirt	Moderate: has potential to occur within study area
Icteria virens	Yellow-Breasted Chat	CSC (nesting), MBTA, MSHCP Covered Species	Mature riparian woodland	Moderate: has potential to occur within study area, with potential nesting habitat present
Lanius ludovicianus	Loggerhead Shrike	FBCC, CSC (nesting), MBTA, MSHCP Covered Species	Open habitats, scrub	High: has potential to occur within study area, with potential nesting habitat present
Plegadis chihi	White-Faced Ibis	CSC, MBTA	Freshwater lagoons, rivers, lakes, wet agricultural fields, and occasionally salt marshes	Moderate: has potential to occur within study area
Polioptila californica californica	Coastal California Gnatcatcher	FT, CSC, MBTA, MSHCP Covered Species	Coastal sage scrub	High: present within study area, with potential to nest in study area
Vireo bellii pusillus	Least Bell's Vireo	FE, SE, MBTA, MSHCP Covered Species	Riparian scrub and low woodland	Moderate: has potential to occur within study area, with potential nesting habitat present
Mammals				
Cheatodipus californicus femoralis	Dulzura California pocket mouse	CSC	Scrub/grassland interface, also woodlands and chaparral	Moderate: has potential to occur within study area

Table 4.5-3 *(Continued)*: Special Status Wildlife Species Known to Occur or with the Potential to Occur within the Valley-Ivyglen Project Study Area

Scientific Name	Common Name	Status	Habitat	Potential to Occur in Study Area (High, Moderate, Low)
Dipodomys stephensi	Stephens' Kangaroo Rat	ST, FE, MSHCP Covered Species	Grasslands with sparse to no shrub cover	High: present within study area
Eumops perotis	Western Mastiff Bat	CSC, MSHCP Covered Species	Areas of chaparral or live oaks and in more arid, rocky regions.	Moderate: has potential to occur within study area
Lepus californica bennettii	San Diego Black-Tailed Jackrabbit	CSC, MSHCP Covered Species	Scrub/grassland interface	Moderate: has potential to occur within study area
Neotoma lepida intermedia	San Diego Desert Woodrat	CSC, MSHCP Covered Species	Cactus thickets, chaparral, sage scrub	High: has potential to occur within study area
Onychomys torridus ramona	Southern Grasshopper Mouse	CSC, MSHCP Covered Species	Abandoned rodent burrows in low to moderate shrub cover	Moderate: has potential to occur within study area
Perognathus (Chaetodipus) fallax fallax	Northwestern San Diego Pocket Mouse	CSC, MSHCP Covered Species	Sage scrub, grassland, desert scrub	Moderate: has potential to occur within study area
Perognathus longimembris brevinasus	Los Angeles Pocket Mouse	FE, CSC, NE, MSHCP Covered Species	Narrow coastal plains.	Moderate: has potential to occur within study area

NOTES:

Federal Status

FE = Federal Endangered
FT = Federal Threatened
FBCC = Federal Birds of Conservation Concern
MBTA = Migratory Bird Treaty Act Species
BEPA = Bald and Golden Eagle Protection Act

State/CDFG Status

SE = State Endangered
ST = State Threatened
CFP = California Fully Protected Species
CSC = California Species of Concern
CNDDB = has a California Natural Diversity Database Ranking Only

County Status

MSHCP Covered Species = Covered species under County of Riverside MSHCP

Coastal California gnatcatcher (*Polioptila californica californica*)
The Coastal California gnatcatcher is a federally listed threatened, state listed species of special concern and MSHCP Covered Species. The CNDDB identifies historic occurrences of coastal California gnatcatcher within disturbed habitat along and adjacent to this segment. Areas along this segment that are occupied by various stages of coastal sage scrub may support nesting and foraging habitat for this species.

Orange-throated whiptail *(Aspidoscelis (Cnemidophorus) hyperythra beldingi)*
Orange-throated whiptail is a federally and state listed species of special concern and MSCHP Covered Species. This species was not identified along this segment during recent surveys; however, a CNDDB occurrence of this species is located along Segment C-1 within disturbed habitat.

Stephens' kangaroo rat
The CNDDB identifies a historic occurrence of this species adjacent to Segment C-1 within disturbed coastal sage scrub habitat. Other areas along this segment that

are occupied by open grasslands or sparse shrublands on gentle slopes may additionally support this species.

Segment C-3. Segment C-3 is predominately vegetated by disturbed and developed habitats (Figure 4.5-2). A small portion of riparian habitat that is associated with an unnamed intermittent stream is also present along this segment.

No special status plant and animal species are known to occur or historically occur near or along Segment C-3.

Segment C-4. The majority of Segment C-4 passes through disturbed and developed, nonnative grassland and disturbed coastal sage scrub habitats (Figure 4.5-2). A small portion of this segment is also vegetated by Riversidean alluvial fan sage scrub.

The terminus of Segment C-4 is located near two areas where evidence of Stephens' kangaroo rats (burrows and scat) was identified within nonnative grassland habitat that is along Segment C-6. Other areas along this segment that are occupied by open grasslands or sparse scrublands on gentle slopes may additionally support this species.

Segment C-6. The majority of Segment C-6 passes through nonnative grassland and disturbed and developed land (Figure 4.5-2). Portions of this segment are also vegetated by riparian and marsh habitat that is located where Segment C-6 intersects Temescal Wash.

The following special status plant and animal species are known to occur or have historically occurred near or along Segment C-6:

San Diego ambrosia (*Ambrosia pumila*)
San Diego ambrosia is an herbaceous perennial that belongs to the sunflower family (Asteraceae). It is a federally listed endangered, CNPS listed, and MSHCP Narrow Endemic Species. A historic occurrence of San Diego ambrosia is located along Segment C-6 within disturbed habitat. This population is in close proximity to the population of San Diego ambrosia that was identified within nonnative grassland habitat along Segment W-1. Both occurrences are located within Altamont clay soils.

Clay soils may support several other listed threatened or endangered species including Munz's onion, thread-leaved brodiaea, San Diego button celery, Orcutt's brodiaea, long-spined spineflower, small-flowered morning glory, many-stemmed dudleya, Palmer's grapplinghook, graceful tarplant, and small-flowered microseris (County of Riverside 2003).

San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*)
San Jacinto Valley crownscale is an annual herb in the goosefoot family (Chenopodiaceae). It is a CNPS listed and MSHCP Criteria Area Species. San Jacinto Valley crownscale was not identified along Segment C-6 during recent surveys; however, the CNDDB identifies an occurrence of this species near this segment within alkali marsh habitat. Other areas along this segment, which are occupied by alkali soils, may support this species.

Smooth tarplant *(Centromadia pungens ssp. laevis)*
The terminus of Segment C-6 is located in very close proximity to the population of smooth tarplant, which was identified near the centerline of Segment W-1. This population was identified growing among San Diego ambrosia within clay soils associated with nonnative grassland habitat. Other areas along this segment, which are occupied by clay soils, may support this and other clay endemic species.

Stephens' kangaroo rat
Biologists identified two areas within nonnative grassland habitat, which had evidence (burrows and scat) of Stephens' kangaroo rats along Segment C-6. These sites are in very close proximity to a CNDDB occurrence of this species. Other areas along this segment that are occupied by open grasslands or sparse scrublands on gentle slopes may additionally support this species.

Segment W-1. The majority of Segment W-1 passes through disturbed and developed nonnative grassland and disturbed coastal sage scrub habitats (Figure 4.5-3). Portions of this segment that are associated with Temescal Wash are also vegetated by riparian habitat.

The following special status plant and animal species are known to occur or have historically occurred near or along Segment W-1:

Long-spined spineflower *(Chorizanthe polygonoides var. longispina)*
Long-spined spineflower is a CNPS listed and MSHCP Covered Species that occurs in southwestern California and northwestern Baja California, Mexico, from western Riverside County south, through San Diego County, to the vicinity of Oso Negros, east of Ensenada, Mexico (County of Riverside 2003). Long-spined spineflower was not identified along Segment W-1 during recent surveys; however, the CNDDB identifies a historic occurrence of this species adjacent to Segment W-1, within fairly open disturbed habitat. Other areas along this segment associated with clay soils lacking vegetation may support this species.

San Diego ambrosia
A population of San Diego ambrosia was identified within clay soils associated with nonnative grassland habitat along this segment. Other areas along this segment associated with clay soils lacking vegetation may support this species (Entrix 2006).

Smooth tarplant
Smooth tarplant is an annual herb that is a CNPS listed and MSHCP Criteria Area Species that belongs to the sunflower family (Asteraceae). This species is endemic to southern California and is known to occur in Orange (extirpated), Riverside, San Bernardino, and San Diego Counties (County of Riverside 2003). A recent population of smooth tarplant was identified along this segment. This population was identified growing among San Diego ambrosia near the centerline of Segment W-1 within nonnative grassland habitat. This area is occupied by Altamont clay soils, which are often associated with other sensitive species mentioned above (Entrix 2006).

Red-tailed hawk - nest (*Buteo jamaicensis*)
The Migratory Bird Treaty Act (MBTA) of 1916 protects the red-tailed hawk. An active red tailed hawk nest was identified along Segment W-1 in the southeast fringe of the Pacific Clay property (AMEC 2006), within a stand of blue gum trees (*Eucalyptus* spp.). The MBTA of 1916 protects all migratory avian populations, and therefore mandates that this nest not be destroyed if still active during the construction or expansion of this segment.

Western spadefoot toad (*Scaphiopus hammondii*)
Juvenile western spadefoot toads were identified along Segment W-1 within three artificial pools located within Pacific Clay Products, Inc. property. Other areas along this segment containing ponded or pooled areas void of fish, bullfrogs, and crayfish may support breeding habitat for this species (AMEC 2006).

Segment W-4. Segment W-4 is predominately vegetated by coastal sage scrub and developed habitats (Figure 4.5-3). Portions of this segment are also vegetated by Riversidean alluvial fan sage scrub and riparian habitat that are associated with Indian Wash and Horsethief Canyon Creek.

The following special status plant and/or wildlife species are known to occur or have historically occurred near or along Segment W-4:

Many-stemmed dudleya (*Dudleya multicaulis*)
Many-stemmed dudleya is a perennial herb in the stonecrop family (Crassulaceae) that is a CNPS listed and MSHCP Narrow Endemic Species. The CNDDB identifies a historic occurrence of this species within nonnative grassland habitat that is underlain by clay soils. Other areas along this segment that are occupied by thinly vegetated lenses of clay soils may support this species.

Munz's onion (*Allium munzii*)
Munz's onion is a federally listed endangered and state listed threatened bulb-forming perennial herb in the lily family (Liliaceae). Biologists identified two populations of Munz's onion along Segment W-4 within clay soils associated with coastal sage scrub and nonnative grassland habitat (AMEC 2006). A CNDDB historic occurrence is also located along this segment near these populations.

Orange-throated whiptail
Orange throated whiptail lizards were not identified along Segment W-4 during recent surveys; however, the CNDDB identifies two locations along this segment wherein this species has been historically identified within Riversidean alluvial fan sage scrub.

Round-leaved filaree (*California macrophylla*)
Round-leaved filaree is a CNPS listed and MSHCP Criteria Area Species in the geranium family (Geraniaceae) that is found throughout California, southern Oregon, and northern Baja California. A historic CNDDB occurrence of this species is located along Segment W-4 within clay soils that are associated with coastal sage scrub habitat. Recent biological surveys along this segment did not identify this species; however, areas along this segment that occupy heavy clay soils with grassland or coastal sage scrub habitat may support this species.

Slender-horned spineflower (*Dodecahema leptoceras*)
Slender-horned spineflower is a small, spreading annual herb in the buckwheat family (Polygonaceae). This federally and state listed endangered species is endemic to California and occurs only in Los Angeles, Riverside, and San Bernardino Counties (CNPS 2006). A CNDDB historic occurrence of this species is located adjacent to this segment within Riversidean alluvial fan sage scrub habitat. Other areas along this segment that are occupied by sandy or gravelly alluvium may support this species.

Small-flowered morning glory (*Convolvulus simulans*)
Small-flowered morning glory is a CNPS listed and MSHCP Covered Species in the morning glory family (Convolvulaceae) that is restricted to clay soils and serpentine seeps and ridges, occurring below elevations of 700 m (2296 ft.) in southern valley needlegrass grassland, mixed native and non-native grasslands, and open coastal sage scrub (County of Riverside 2003).

Biologists identified a population of this species within clay soils that are associated with nonnative grassland along this segment (AMEC 2006). Other areas along this segment associated with heavy clay soils may support this species.

Segment W-8. Segment W-8 is predominately vegetated by disturbed coastal sage scrub and developed habitats. Areas of this segment are also vegetated by riparian forest, Riversidean alluvial fan sage scrub, and small patches of coast live oak woodland (Figure 4.5-3).

The CNDDB identifies two special status species adjacent to this segment, Munz's onion and many-stemmed dudleya, within coastal sage scrub habitat occurring in clay soils. Other areas along this segment supporting thinly vegetated lenses of clay soils may support these clay endemic species.

Segment W-10. Segment W-10 is predominately vegetated by disturbed coastal sage scrub and developed habitats. Areas of this segment are also vegetated by riparian forest, Riversidean alluvial fan sage scrub, and patches of coast live oak woodland (Figure 4.5-3).

The following special status plant and/or wildlife species are known to occur or have historically occurred near or along Segment W-10:

> **Munz's onion**
> Munz's onion was not identified along this segment during recent biological surveys; however, a CNDDB historic occurrence of this species is located along Segment W-10 within clay soils that are associated with disturbed coastal sage scrub habitat. Other areas along this segment that are underlain by clay soils may support this species.
>
> **Stephens' kangaroo rat**
> Recent biological surveys did not identify Stephens' kangaroo rat or evidence of this species along this segment; however, the CNDDB identifies a historic occurrence of Stephens' kangaroo rat within disturbed coastal sage scrub. Other areas along this segment supporting open grasslands or sparse scrublands on gentle slopes may support this species.

4.5.2 REGULATIONS, PLANS, AND STANDARDS

Federal

Federal Endangered Species Act

The Endangered Species Act (7 U.S.C. 136; 16 U.S.C. 460) of 1973 provides for the conservation of plant and animal species that are endangered or threatened with extinction throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The Endangered Species Act (ESA) forbids federal agencies from authorizing, funding, or carrying out actions that may jeopardize endangered species. The ESA forbids any government agency, corporation, or citizen from taking (i.e. harming, harassing, or killing) endangered animals without a permit. The administering agency for terrestrial and avian species, as well as for non-anadromous freshwater fish, is the US Fish and Wildlife Service (USFWS). Sections 7 and 10 of the Act may require consultation with the USFWS for the protection of such species prior to implementation of the Proposed Project.

Clean Water Act

The Clean Water Act regulates restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. The Clean Water Act authorizes the United States Army Corps of Engineers (USACOE) to require that a project obtain a permit if the project falls within the jurisdiction of the Clean Water Act.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) or part thereof.

State

State of California Endangered Species Act

The State of California Endangered Species Act (CESA) ensures legal protection for plants and animals listed as rare or endangered. The state also lists "Species of Special Concern" based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under the law, the California Department of Fish and Game (CDFG) is empowered to review projects for their potential to impact state-listed species and Species of Special Concern and their habitats.

California Fish and Game Code, Sections 1600-1603

This statute regulates activities that would "substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of a natural watercourse" that supports fish or wildlife resources. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. A Streambed Alteration Agreement must be obtained for any proposed project that would result in an adverse impact to a river, stream, or lake. If fish or wildlife would be substantially adversely affected, an agreement to implement mitigation measures identified by the CDFG would be required.

California Fish and Game Code Section 3503.5

Birds of prey are protected in California under the Fish and Game Code, Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season that results in the incidental loss of fertile eggs or nestlings, or otherwise leads to nest abandonment is considered take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered also considered take by CDFG.

California Fish and Game Code Sections 3511 and 5050

California Fish and Game Code section 3511 and 5050 prohibits the taking and possession of birds and reptiles listed as "fully protected." The administering agency is the CDFG.

CEQA Guidelines Section 15380

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria.

Local

Native and Heritage Tree Ordinances

The County of Riverside has several tree protection regulations such as the Riverside County Oak Tree Management Guidelines which regulate the removal of native oak trees (County of Riverside 1993), the County of Riverside, Roadside Tree Ordinance No. 12.08 which regulates the removal of trees within County highway ROWs, and the County of Riverside, Open Space and Conservation Element, 1996, which requires that any future development in an identified sensitive vegetation area (including oak woodlands) must be evaluated individually and cumulatively for potential impact on vegetation (County of Riverside 1993).

Western Riverside County Multiple Species Habitat Conservation Plan

The Proposed Project is in the coverage area of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), which serves as an HCP pursuant to Section 10(a)(1)(B) of the Endangered Species Act, as well as a National Communities Conservation Plan (NCCP) under the NCCP Act of 2001. The MSHCP, which was adopted by the County of Riverside on June 17, 2003, is one of several large, multi-jurisdictional habitat conservation planning efforts in Southern California with the overall goal of maintaining biological diversity within a rapidly urbanizing region. The MSHCP will allow Riverside County and participating cities to better control local land-use decisions and maintain a strong economic climate in the region while addressing the requirements of the ESA and CESA. Figures 4.5-4 through 4.5-7 show MSHCP boundaries and criteria areas in the Project Study Area.

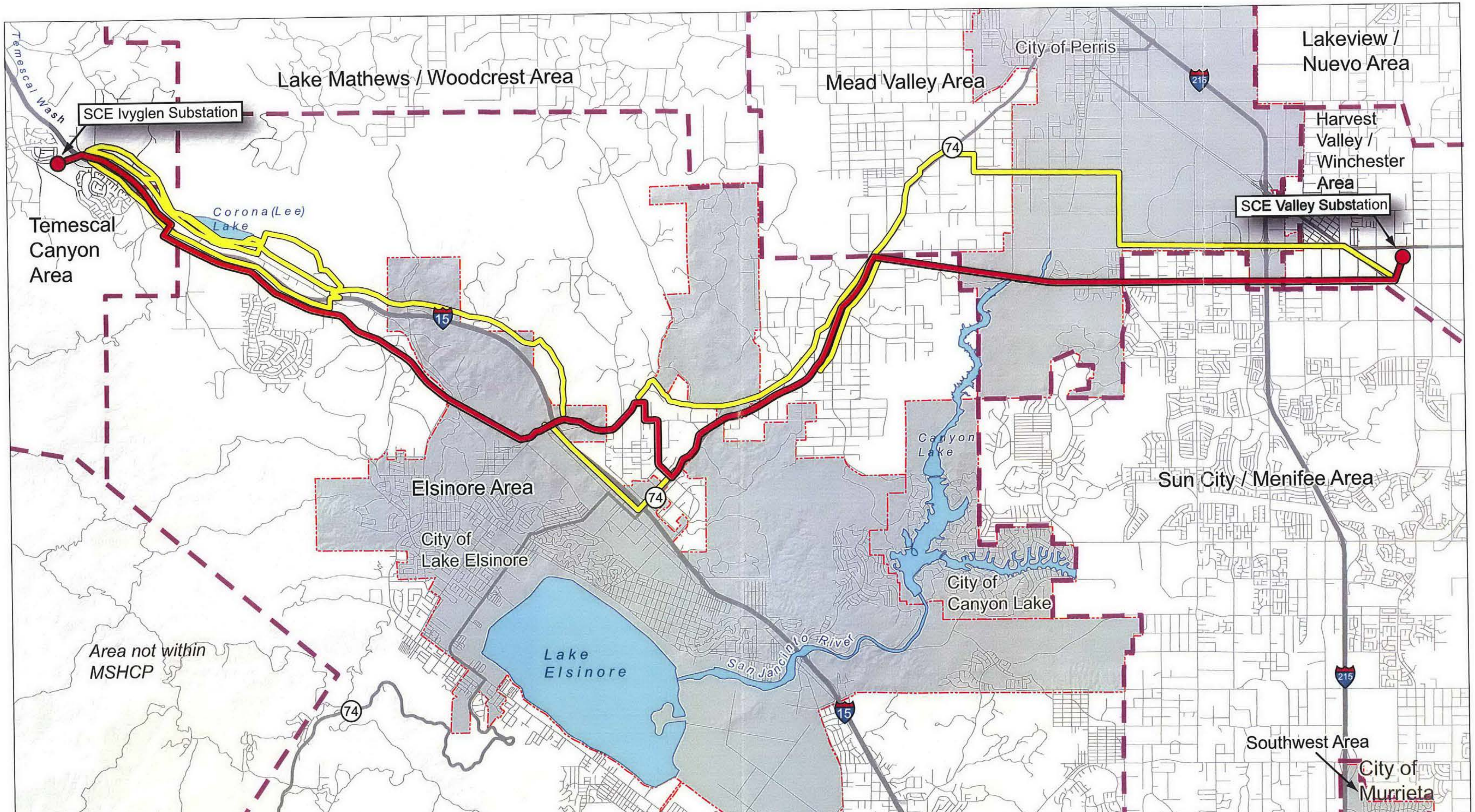
The MSHCP provides a conservation area for 146 special-status species, including federal and state listed endangered and threatened species, and provides incidental take permits for development projects that impact these covered species.

The MSHCP includes the following requirements:

- Site-specific focused surveys for Narrow Endemic Plant Species and for all public and private projects where appropriate habitat is present
- Surveys for Criteria Area Wildlife Species where suitable habitat is present
- Site surveys of riparian, riverine, and vernal pool resources in order to conserve these resources and the species that use them
- Habitat compensation measures in the event that sensitive habitat is removed or adversely affected during project construction
- Fee payment to the appropriate permit agency when work is conducted within certain jurisdictional areas of the MSHCP

SCE has included sensitive species information from the MSHCP in this document, and is following the intent of the Plan in creation of its Proposed Measures and Mitigation Measures to protect sensitive species and habitat.

Figure 4.5-4: Riverside County Integrated Project Multiple Species Habitat Conservation Plan (MSHCP) Area



SOURCE: Dudek & Associates, Inc. 2002, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

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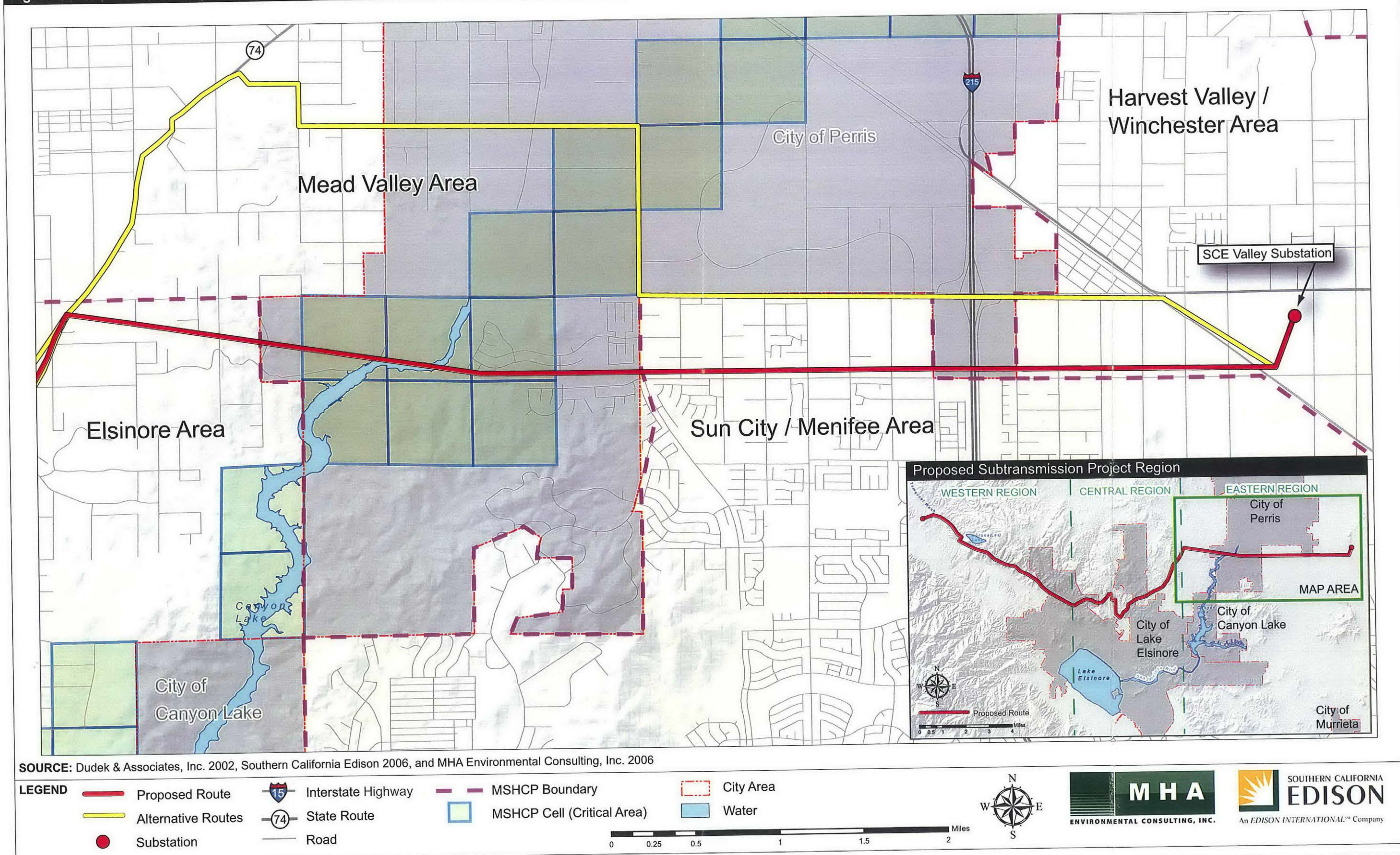
Figure 4.5-5: Riverside County Integrated Project Multiple Species Habitat Conservation Plan (MSHCP) Area



SOURCE: Dudek & Associates, Inc. 2002, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

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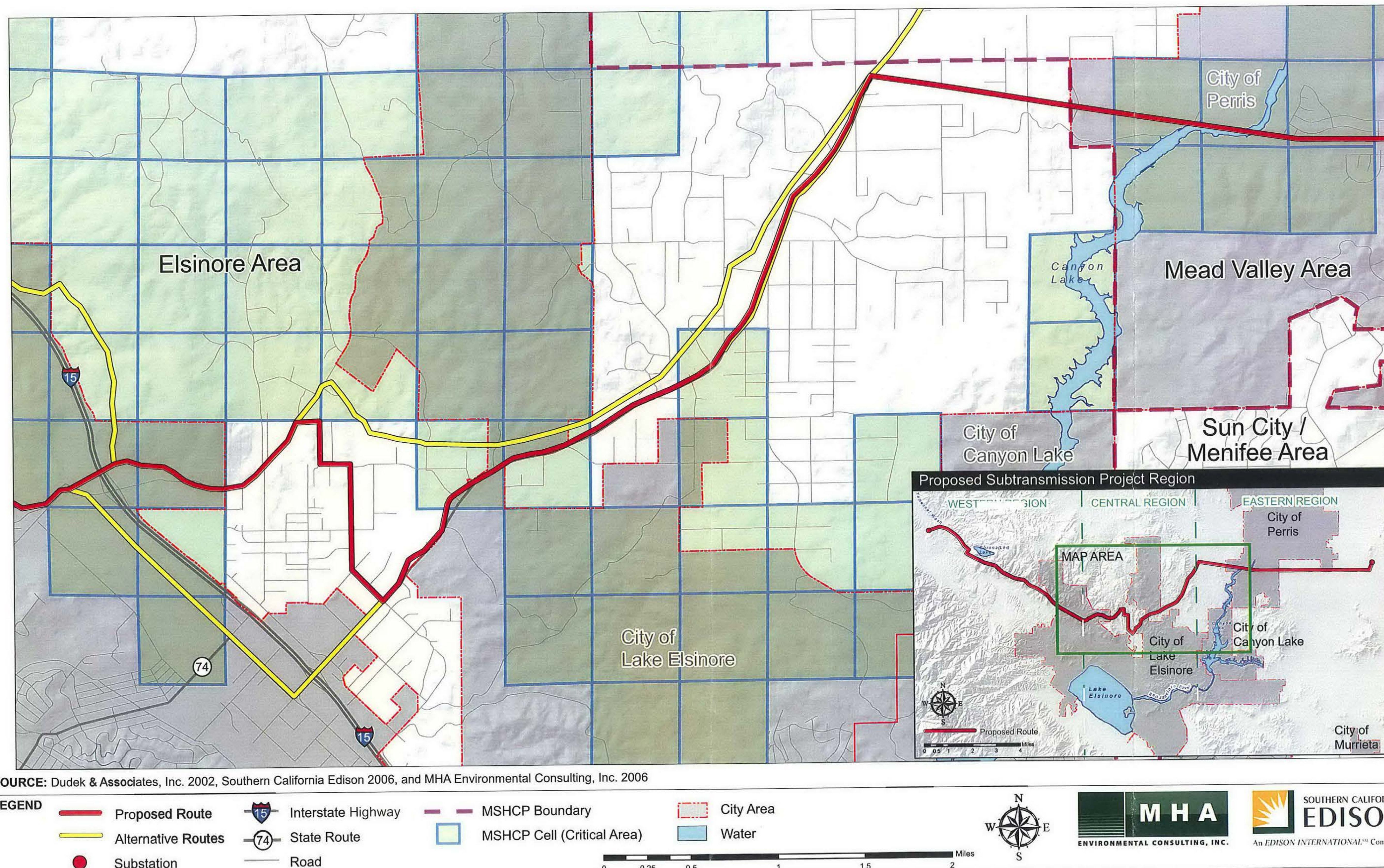
Figure 4.5-6: Riverside County Integrated Project Multiple Species Habitat Conservation Plan (MSHCP) Area



SOURCE: Dudek & Associates, Inc. 2002, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

MHA ENVIRONMENTAL CONSULTING, INC.

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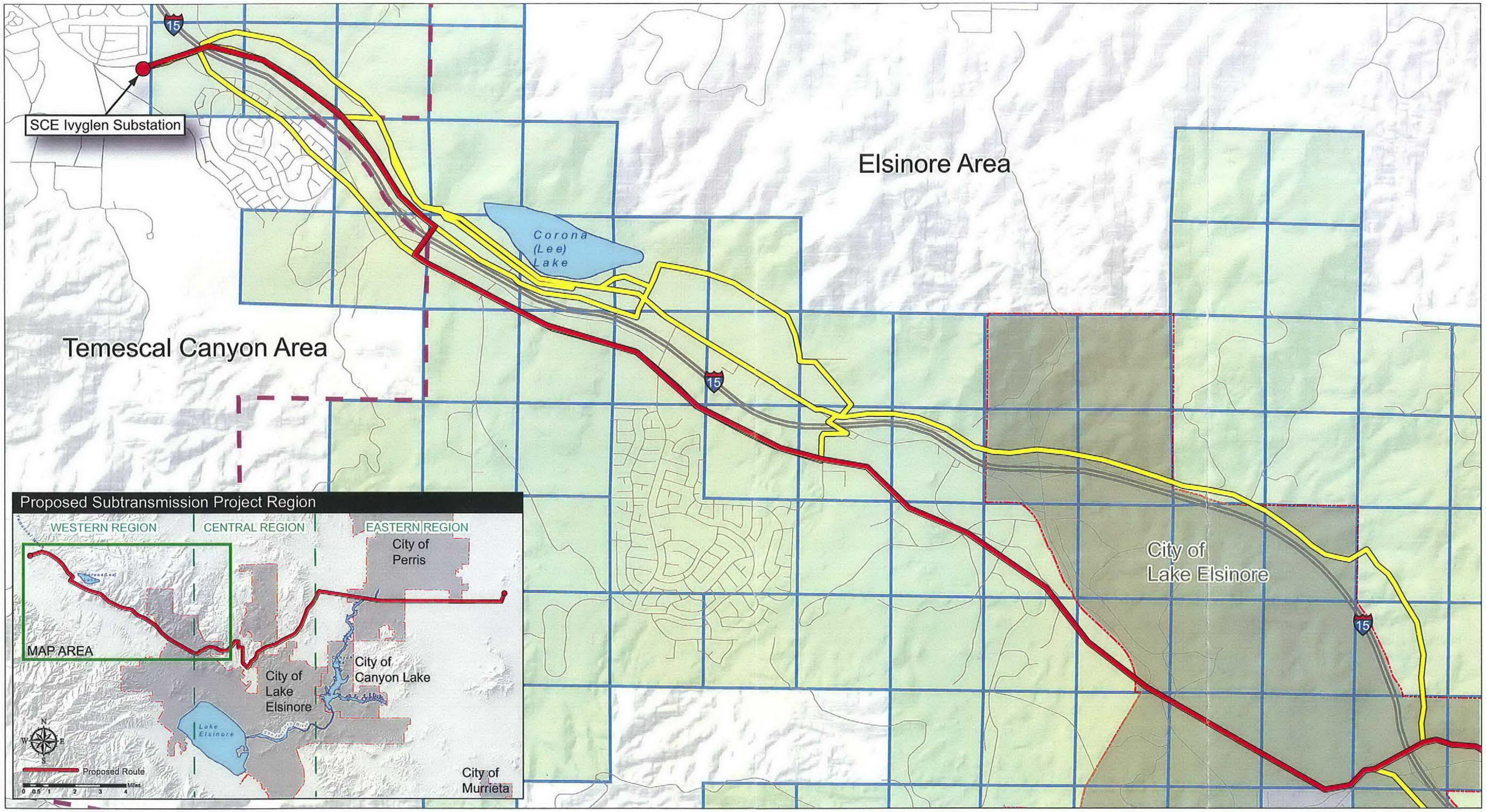
Figure 4.5-7: Riverside County Integrated Project Multiple Species Habitat Conservation Plan (MSHCP) Area



SOURCE: Dudek & Associates, Inc. 2002, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

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4.5.3 SIGNIFICANCE THRESHOLDS

The significance criteria for assessing the impacts to biological resources come from the CEQA Environmental Checklist. A project causes a potentially significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

4.5.4 IMPACT ANALYSIS

Impact Summary

The greatest potential impacts to biological resources resulting from the Proposed Project are impacts to native and nonnative vegetation communities and populations of special-status species. Impacts would be associated predominately with construction activities. SCE Proposed Measures and Mitigation Measures would limit impacts to less than significant levels.

Construction

Special-status Plant Species

Subtransmission Line. *Direct Effects to Plants and Habitat.* Several special status plant species currently occur, historically occurred, or have the potential to occur along the Proposed Subtransmission Line Route. Construction activities could result in direct effects to special status plant species, as well as removal or destruction of habitat. Impacts would be related to the following activities:

- Road grading and construction
- Pole site preparation and line stringing activities
- Tree and scrub removal to facilitate line/pole placement
- Movement of equipment and project materials

Each of these activities could destroy or adversely affect sensitive species if they are present. Grading of previously undisturbed surfaces may occur to access structure pole sites or for cable pulling activities. Blading would remove rocks, large shrubs, and other objects from the soil surface. This would result in changes in habitat quality and conditions. Habitat could be removed at many structure locations, conductor tensioning and splicing locations, and at construction yards. Construction yards may not be graded in all cases; however, it is anticipated that these areas could be damaged by vehicle parking and storage of materials during construction.

Sensitive species present during construction in affected areas could be crushed from operation of heavy machinery and foot traffic. Construction activities would remove, destroy, or denude existing habitat, thereby potentially reducing available habitat for sensitive plant species.

The potential adverse impacts to habitats associated with special-status plant species can be limited to less than significant levels by the implementation of SCE Proposed Measures and Mitigation Measures during construction activities. SCE compliance with the Western Riverside County MSHCP (BIO-MM-4) will additionally mitigate for any impacts to sensitive plant species that are covered by the Plan.

Nonnative Weeds and Invasive Plants. The loss of topsoil from grading or as a result of overland flow may increase the likelihood of exotic plant establishment in native communities. Nonnatives may be more successful establishing and surviving in disturbed areas than native species, thus resulting in suppressed native recruitment, altered community structure, degradation or elimination of habitat for native wildlife, and increased amounts of food and cover for undesirable nonnative wildlife (Bossard et al. 2000). The introduction of nonnative plant species into a community as a result of soil disturbance and erosion can increase the competition for resources such as water, minerals, and nutrients between native and nonnative species as well as alter site hydrology and sedimentation rates.

The establishment of nonnative weeds could affect special status species associated with the surrounding habitat and could therefore be considered potentially significant if not mitigated. As a means of avoiding and minimizing impacts due to nonnative species, implementation of BIO-SCE-1, -2, and -7 during construction and the implementation of BIO-MM-1 and -4 will reduce the potential impacts associated with the establishment of nonnative weeds and invasive plants to less than significant levels.

Telecommunications. Construction of the telecommunications line would occur along access roads constructed during line construction. The line would be strung from existing or newly constructed poles except in locations where short distances would be placed in underground structures. There would be no impacts to special status species where the line is strung on poles. Areas of underground construction would disturb vegetation and have many of the same potential effects to special status plant species as construction of the subtransmission line. Implementation of SCE Proposed Measures and BIO-MM-1 and -4 would insure that the impacts to special status plant species resulting from construction of the telecommunications line are less than significant.

Substations. Construction at the substations would have no effect on special status plant species, as it would occur within the existing substation grounds. The substation area is covered with gravel and does not support sensitive plant species.

Special Status Wildlife Species

Subtransmission Line. Several special-status wildlife species currently occur, historically occurred, or have the potential to occur along the Proposed Subtransmission Line Route. These species include Bell's sage sparrow, burrowing owl, coastal California gnatcatcher, least Bell's vireo, orange-throated whiptail, Southern California rufous-crowned sparrow, Stephens' kangaroo rat, and western spadefoot toad, as well as the species listed in Table 4.5-2. Impacts to these sensitive terrestrial wildlife resources as a result of the Proposed Project are likely to occur from construction activities.

Direct Wildlife Mortality. This involves the direct loss of special-status small mammals, reptiles, and other less mobile species that could result, primarily, from the access by construction vehicles. These animals are ground dwelling and may be crushed during grading and vehicle transport.

Direct impacts to special-status wildlife species will be less than significant through implementation of a combination of SCE Proposed Measures and BIO-MM-1, -3, and -4 with the addition of preconstruction focused surveys at each known proposed pole site, cable pulling site, laydown area, and access road using applicable survey protocols for each species. Compliance with the Western Riverside County MSHCP (BIO-MM-4) will additionally mitigate for any impacts to sensitive species that are covered by the Plan.

Wildlife Habitat Removal and Alteration. Wildlife habitat would be removed during road and line construction. The Proposed Subtransmission Line Route crosses several areas of quality wildlife habitat that would be affected by construction activities. The removal and alteration of habitat can have direct impacts on special status animal species utilizing the habitats for foraging, breeding, or cover. SCE Proposed Measures are intended to provide basic protection to sensitive species habitat. BIO-MM-1 is intended to protect sensitive habitats that may support special status species and would limit impacts to less than significant levels. BIO-MM-3 would limit impacts to wetland areas that are important to several sensitive wildlife species. BIO-MM-4 calls for conformance with the MSHCP and would further limit potential impacts to sensitive wildlife species.

Noise and Human Presence. Noise impacts during the construction of the proposed Valley-Ivyglen transmission lines could adversely affect wildlife by frightening or repelling individuals, masking communication, and impairing foraging success and predator detection. These effects are significant when they adversely affect the lifecycle of sensitive species, or constrain wildlife movement through a wildlife corridor.

Construction noise has the potential to impact the lifecycle of sensitive wildlife species identified onsite, or that have a high potential to occur onsite. Avian species could be directly affected by noise impacts during nesting periods. These species could include sage scrub nesters such as the coastal California gnatcatcher and the Southern California rufous-crowned sparrow, and riparian-nesting birds such as the Bell's sage sparrow and least Bell's vireo.

Adverse indirect noise impacts could occur to other nesting migratory birds, including raptors but would not necessarily be significant because of the lower sensitivity status of these species. However, with the implementation of BIO-SCE-15, impacts from noise would be considered less than significant.

Lighting. If used, nighttime lighting entering adjacent wildlife habitat from construction could temporarily impact sensitive wildlife species and wildlife movement. These temporary impacts would likely be considered adverse, but not significant unless listed bird species were found nesting within the area of the lighting impact.

Telecommunications. Construction of the telecommunications line would occur along access roads built during line construction. The line would be strung from existing or newly constructed poles except in locations where short segments of the line would be placed in underground structures. There would be no impacts to special status species where the line is strung on poles as all activities would occur in areas of disturbed habitat and would occur during the day. Noise would be minimal and would occur for less than one day in any one place. Areas of underground construction could disturb wildlife habitat and would have many of the same potential effects to special status species as construction of the subtransmission line. Implementation of SCE Proposed Measures and BIO-MM-1 -3, and -4 would insure that the impacts to special status wildlife species resulting from construction of the telecommunications line are less than significant.

Substations. The Valley Substation is surrounded by agricultural, nonnative grassland and developed and disturbed habitats. Wildlife species such as the burrowing owl and Stephen's kangaroo rat may be identified within these habitats. Pre-construction surveys would be conducted in areas where ground-disturbing impacts are anticipated to occur. Implementation of SCE Proposed Measures and BIO-MM-1 and -4 would insure that the impacts to special status wildlife species resulting from construction at the substation are less than significant.

The Ivyglen Substation is surrounded by Riversidean alluvial fan sage scrub, coastal sage scrub, and developed and disturbed habitat. Wildlife species such as the burrowing owl, coastal California gnatcatcher, Bell's sage sparrow, Southern California rufous-crowned sparrow, Orange-throated whiptail, San Diego horned lizard, and Stephen's kangaroo rat may be identified within these habitats. Pre-construction surveys would be conducted in areas where ground-disturbing impacts are anticipated to occur. Implementation of SCE Proposed Measures and BIO-MM-1, -3, and -4 would insure that the impacts to special status wildlife species resulting from construction at the substation are less than significant.

Sensitive Habitats and Communities

Subtransmission Line. Construction and future operation-related activities associated with the Proposed Project could potentially result in temporary or permanent impacts to natural vegetation communities (i.e., coastal sage scrub, Riversidean alluvial fan sage scrub, seasonal wetland, etc.) and sensitive habitats such as wetlands and riparian habitat within the Project Study Area. The following types of activities could potentially affect sensitive habitats in the Project Study Area:

- Clearing of vegetation resulting from the construction or replacement of subtransmission poles, access roads, staging areas, and cable pull sites
- Trenching activities during fiber optic telecommunication line installation
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes

The activities could result in soil compaction, increased dust, and reduced water quality in riparian or wetland habitats resulting from construction runoff containing petroleum products or fine sediment. Implementation of AIR-SCE-1, -2, -3 and -4 and HYDRO-SCE-1, -2 and -3 would limit potential impacts to riparian and wetland habitat from dust and runoff to less than significant levels.

Incorporation of BIO-SCE-1, -6, -7, -9, -10, and -14, BIO-MM-1 and SCE's compliance with the Western Riverside County MSHCP (BIO-MM-4) would additionally mitigate impacts to natural vegetation communities and sensitive habitats covered by the Plan.

Substations. Construction at the existing substations would not impact any sensitive habitats or vegetation communities. The substations and surrounding work areas are covered with gravel and do not contain these habitats or vegetation communities.

Riverside MSHCP

SCE would abide by all the policies and regulations set forth in the MSHCP as outlined in BIO-MM-4. SCE has also integrated the BMPs outlined in the MSHCP into its Proposed Measures. Surveys for MSHCP criteria species were conducted prior to the project and findings from the surveys are included in this document and appropriate measures (as outlined in the MSHCP) will be implemented to protect MSHCP species and habitats. Impacts would be less than significant.

Toxic Substances

Toxic substances can kill wildlife and plants or prevent new growth where soils or water are contaminated. Toxic substances can be released into the environment through several scenarios including planned or accidental releases, leaching from stored materials, pesticide or herbicide use, or fires, among others. No intentional releases of toxic substances are planned as part of the Proposed Project. Accidental releases could occur from several sources such as leaking equipment or fuel spills during the course of the construction.

The implementation of SCE Proposed Measures during construction will reduce the risk of leaks and fuel spills below a level of significance. A SWPPP and spill contingency plan, written by the construction contractor and approved prior to construction, would be in effect during all phases of construction activities.

Tree Removal

A few trees will likely be removed to install new poles in areas where the proposed route passes through upland or riparian vegetation. Many areas containing trees (riparian drainages) will be spanned, eliminating the need for tree removal, but some trees might be trimmed to protect the transmission lines and to reduce fire danger. Tree trimming or removal will likely be required along some access roads and at some staging areas and pull sites.

All tree removal and trimming required for the project will be conducted during the non-nesting season (from September 1 through January 31) to the extent feasible as addressed in BIO-SCE-14. A qualified wildlife biologist will conduct a pre-construction survey for nesting birds for tree trimming or other potential nest-disturbing activities that will be conducted from February 1 to August 31. The survey will be conducted no more than one week prior to the start of work activities and will cover all affected areas including the Proposed Subtransmission Line Route, staging areas, pull sites, and access road improvement areas where substantial ground disturbance or vegetation clearing is required. The biologist will establish an appropriate exclusionary work zone on a site-specific basis if active nests are present.

Project vehicles, chain saws, or heavy equipment will not be operated within this exclusion zone, to the extent feasible, until the nesting season is over or the biologist has determined that nesting is finished and the young have fledged. BIO-SCE-15 outlines the manner in which work should proceed if it is not practicable to avoid work within an exclusion zone around an active nest. BIO-SCE-14 and BIO-MM-4 would reduce potential impacts to less than significant levels.

Fugitive Dust

Trenching, grading, and vehicle operations associated with the construction of the Proposed Project could result in fugitive dust. Excessive dust can damage or degrade vegetation by blocking leaf exposure to sunlight. Fugitive dust can also cause impacts to water quality. Implementation of AIR-SCE-1, -2, -3, -4, -5, -6, -7 and -8 would reduce any impacts from fugitive dust to less than significant.

Operation

Subtransmission Line

Increased Predation and Competition. The Proposed Project would introduce structures to areas that currently do not have trees or other tall structures that allow predator perching. As a result, some wildlife species in the vicinity of the proposed transmission line corridor (i.e., raptors) would be given a competitive advantage. The introduction of tall structures that can be used as perches during hunting would benefit some raptor populations by providing a secure vantage point from which to survey large areas of habitat. In addition, habitats that raptors had previously used only occasionally could become routine hunting areas due to the increase in available perches and potential nest sites. Wildlife displaced from construction areas could be forced into already occupied habitat, thus placing them at a competitive disadvantage from resident individuals of the same species or those of different species with similar requirements. The implementation of BIO-SCE-12 would ensure that all subtransmission poles would be raptor-safe. Operational impacts would be less than significant.

4.5.5 SCE PROPOSED MEASURES

The following are SCE proposed measures to further reduce the less-than-significant impacts related to biological resources.

BIO-SCE-1: A condition would be placed on grading permits requiring a qualified biologist to conduct a training session for project personnel prior to grading. The training would include a description of the species of concern and its habitats, the general provisions of the Endangered Species Act (Act) and the MSHCP, the need to adhere to the provisions of the Act and the MSHCP, the penalties associated with violating the provisions of the Act, the general measures that are being implemented to conserve the species of concern as they relate to the project, and the access routes to and project site boundaries within which the project activities must be accomplished.

BIO-SCE-2: Water pollution and erosion control plans would be developed and implemented in accordance with RWQCB requirements.

BIO-SCE-3: The footprint of disturbance would be minimized to the extent feasible. Access to sites would be via pre-existing access routes where possible.

BIO-SCE-4: Projects would be designed to avoid the placement of equipment and personnel within stream channels or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

BIO-SCE-5: Projects that cannot be conducted without placing equipment or personnel in sensitive habitats shall be timed to avoid the breeding season of riparian species identified in MSHCP Global Species Objective No. 7.

BIO-SCE-6: Equipment storage, fueling, and staging areas would be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas would be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to appropriate entities including but not limited to applicable jurisdictional city, FWS, and CDFG, RWQCB and would be cleaned up immediately and contaminated soils removed to approved disposal areas.

BIO-SCE-7: Erodible fill material would not be deposited into water courses. Brush, loose soils, or other similar debris material would not be stockpiled within the stream channel or on its banks.

BIO-SCE-8: A qualified biologist would monitor construction activities for the duration of the project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat and species of concern outside the project footprint.

BIO-SCE-9: The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.

BIO-SCE-10: Construction employees would strictly limit their activities, vehicles, equipment, and construction materials to the Proposed Project footprint and designated staging areas and routes of travel. The construction area(s) would be cordoned off minimal area necessary to complete the project and shall be specified in the construction plans. Construction limits will be fenced with orange barrier fence. Exclusion fencing should be maintained until the completion of all construction activities. Employees would be instructed that their activities are restricted to the construction areas.

BIO-SCE-11: The Permittee shall have the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with project approval conditions including these BMPs.

BIO-SCE-12: All subtransmission poles would be designed to be raptor-safe in accordance with the Suggested Practices for Raptors on Power Lines: State of the Art in 1996 (Avian Power Line Interaction Committee 1996).

BIO-SCE-13: Prior to installation of the poles a survey would be conducted to locate any raptor or raven nests occurring on the existing poles. If nests are found on poles planned for replacement or modification, SCE would suspend work until the nests are inactive.

BIO-SCE-14: Pre-Construction Tree Surveys will be conducted to avoid abandonment or removal of active nests (with eggs or young) of any special status or non-special-status migratory birds and raptors violates the State Fish and Game Code and the federal MBTA. To avoid this impact, SCE will implement one of the following:

a. Conduct all construction activity (including vegetation pruning or removal) during the non-breeding season (generally between September 1 and January 31) for most special-status and non-special-status migratory birds; or

b. If construction activities are scheduled to occur during the breeding season (generally between February 1 and August 31), retain a qualified wildlife biologist to conduct pre-construction focused nesting surveys prior to tree trimming or removal activities. The biologist will monitor all work activities within these zones daily and assess their effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist will recommend additional, feasible measures to minimize the risk of nest disturbance. If work activities are found to result in harm to nesting birds, destruction of an active nest, or nest abandonment prior to fledging, the SCE biologist will be notified and report the incident to the CDFG and USFWS.

BIO-SCE-15: SCE would minimize noise through careful work scheduling and having properly functioning mufflers on construction vehicles. In addition, to the extent practicable, no project vehicles, chain saws, or heavy equipment would be operated within the exclusion zone until the nesting season is over or the biologist has determined that nesting is finished and the young have fledged. If it is not practicable to avoid work within an exclusion zone around an active nest, work activities modified to minimize disturbance of nesting birds may proceed within these zones. The biologist would monitor all work activities within these zones daily and assess their effect on the nesting birds. If the biologist determines that particular activities pose a high risk of disturbing an active nest, the biologist would recommend additional, feasible measures to minimize the risk of nest disturbance. If work activities were found to result in harm to nesting birds, destruction of an active nest, or nest abandonment prior to fledging, the biologist would report this to the CDFG and USFWS.

4.5.6 MITIGATION MEASURES

Mitigation measures are actions that are additional to SCE Proposed Measures intended to avoid or reduce impacts. Implementation of these mitigation measures would reduce the level of impacts to biological resources to less than significant levels.

BIO-MM-1: Environmentally Sensitive Areas. SCE will reduce impacts to sensitive habitat by avoiding grading or other ground disturbing activities near sensitive habitats to the greatest extent possible. However, where this is not feasible, environmentally sensitive areas such as rare plant populations or specific breeding habitat will be identified in the field to minimize the possibility of inadvertent encroachment using the following avoidance and mitigation measures:

a. Flagging or otherwise marking sensitive plant species so construction crews will avoid direct or indirect impacts to these areas. Construction personnel shall be instructed to avoid intrusion beyond these marked areas.

b. Monitor the known locations of special-status plant populations that might be found prior to or during the construction period, using a trained professional botanist. Monitor while construction is taking place in the vicinity of the special-status plant populations and for one year following construction to assess the effectiveness of protection measures.

c. Fencing construction limits that are adjacent to sensitive biological resources. Temporary fencing will consist of t-posts with orange barrier fence. Silt fences will also be included when construction occurs adjacent to wetlands.

BIO-MM-2: Tree Removal Permitting. Retain a Tree Removal Permit from the County of Riverside. The County of Riverside, Roadside Tree Ordinance 12.08 requires permits for tree removal within county highway ROWs (County of Riverside 2004). In addition, the County of Riverside requires that any future development in an identified sensitive vegetation area (including oak woodlands) must be evaluated individually and cumulatively for potential impact on vegetation (County of Riverside 1993). Mitigation will be coordinated, as required, with the appropriate public and resource agencies once tree removal permits or approvals for lost significant trees are obtained, Mitigation for lost trees may not be implemented within the ROW due to fire safety concerns, and instead may be implemented in an alternative, agency-approved location.

BIO-MM-3: Wetlands Avoidance and Restoration. A wetland delineation per the USACE Wetlands Delineation Manual (USACE 1987) will be conducted prior to construction if it is determined that there is any likelihood of a potential impact to a wetland. The delineation will use a three-parameter approach that includes an examination of vegetation, soils, and hydrology to determine the presence of wetlands. A wetland report will be prepared and submitted to the USACE for verification.

Through this process, final calculations of jurisdictional wetland areas present in the Project Study Area will be obtained for project permitting. Wetlands and aquatic resources such as intermittent and perennial creeks, drainages, and swales that occur within the ROW will be denoted as environmentally sensitive areas and will be avoided during construction to the degree practicable. Many of the larger creeks flow through culverts beneath existing roads and they will not be directly impacted. However, smaller creeks and resources may flow across the ROW and could be affected. Where avoidance of riparian and wetland areas is not feasible and work is required within jurisdictional wetlands, drainages, and other wetland habitats, SCE would obtain and comply with all necessary USACE and CDFG permits under the CWA and CDFG 1600 regulations. Adherence to any applicable regulatory requirements would reduce any potential impacts to less than significant levels.

Additionally, potential hydrologic impacts would be minimized through the use of BMPs such as water bars, silt fences, staked straw bales, and mulching and seeding of all disturbed areas. These measures will be designed to minimize ponding, eliminate flood hazards, and avoid erosion and siltation into any creeks, streams, rivers, or bodies of water.

BIO-MM-4: Western Riverside County MSHCP Compliance. SCE will comply with all regulations and policies outlined in the MSHCP. This will include:

a. The payment of Local Development Mitigation Fees and other relevant fees as set forth in Section 8.5 of the MSHCP
b. Compliance with the Habitat Evaluation and Acquisition Negotiation Strategy (HANS) process or equivalent process to ensure application of the criteria and thus, satisfaction of the local acquisition obligation
c. Compliance with the policies for the Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, set forth in Section 6.1.2 of the MSHCP
d. Compliance with the policies for the Protection of Narrow Endemic Plant Species set forth in Section 6.1.3 of the MSHCP
e. Compliance with survey requirements as set forth in Section 6.3.2 of the MSHCP
f. Compliance with the Urban/Wildlands Interface Guidelines as set forth in Section 6.1.4 of the MSHCP
g. Compliance with the BMPs and the siting and design criteria as set forth in Section 7.0 and Appendix C of the MSHCP

4.5.7 PROJECT ALTERNATIVES

The impact comparison Table 4.5-4 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.5-4: Biological Impacts of the Alternative Route Segments				
Alternative Route	**Setting**	**Impact**	**Compared to Proposed Project**	**SCE Proposed Measures/ Mitigation Measures**
E-2	E-2 travels through agricultural and developed and disturbed habitat. E-1. This segment additionally passes through small portions of riparian habitat associated with the San Jacinto River and other drainages.	Impacts to burrowing owl and thread-leaved brodiaea may result from construction activities associated with the project. Vegetation communities including coastal sage scrub, nonnative grassland and riparian/wetland habitat may be impacted as a result of construction activities associated with the project. Impacts to these species and habitats would be less than significant through implementation of the SCE Proposed Mitigation Measures.	Less Impact	Same as Proposed Route
C-2	C-2 passes through coastal sage scrub habitat and less disturbed and developed habitat than C-1. This segment travels through Riversidean alluvial fan sage scrub.	Impacts to Bell's sage sparrow, burrowing owl, coastal California gnatcatcher and Stephen's kangaroo rat may result from construction activities associated with the project. Natural vegetation communities including nonnative grassland, coastal sage scrub, Riversidean alluvial fan sage scrub, and riparian/wetland habitat may also be impacted as a result of construction activities associated with the project. Impacts to these species and habitats would be less than significant through implementation of the SCE Proposed Mitigation Measures.	Equal Impacts	Same as Proposed Route
C-7	C-7 passes through disturbed and developed lands.	Impacts to coastal California gnatcatcher, burrowing owl, and Stephen's kangaroo rat may result from construction activities associated with the project. Natural vegetation communities including coastal sage scrub, nonnative grassland and riparian/wetland habitat may be impacted as a result of this project. Impacts to these species would be less than significant through implementation of the SCE Proposed Mitigation Measures.	Less Impacts	Same as Proposed Route

Table 4.5-4 *(Continued)*: Biological Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
W-2	W-2 travels through more coastal sage scrub habitat than W-1.	Impacts to coastal California gnatcatcher, orange-throated whiptail, San Diego horned lizard, southern California rufous-crowned sparrow, and Stephen's kangaroo rat may result from construction activities. Natural vegetation communities including nonnative grassland, coastal sage scrub and riparian/wetland habitat may be impacted as a result of this project. Impacts to these species and habitats would be less than significant through implementation of the SCE Proposed Mitigation Measures.	Equal Impact	Same as Proposed Route
W-3	W-3 Primarily passes through disturbed and developed habitat.	No special-status species are known to occur along Alternative W-3. Natural vegetation communities including coastal sage scrub and riparian/wetland habitat may be impacted as a result of this project. Impacts to these habitats would be less than significant through the implementation of the SCE Proposed Mitigation Measures.	Less Impact	Same as Proposed Route
W-5	W-5 passes through coastal sage scrub habitat. This alternative segment passes through Riversidean alluvial fan sage scrub, whereas the proposed route does not pass through this vegetation community.	Impacts to many-stemmed dudleya, Munz' onion, orange-throated whiptail, round-leaved filaree, slender-horned spineflower, and small-flowered morning glory may result from construction activities associated with this project. Natural vegetation communities including coastal sage scrub, nonnative grassland, Riversidean alluvial fan sage scrub, and riparian/wetland habitat may be impacted as a result of this project. Impacts to these habitats would be less than significant through the implementation of the SCE Proposed Mitigation Measures.	Greater Impact	Same as Proposed Route

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4.6 Cultural Resources

4.6.1 ENVIRONMENTAL SETTING

Introduction

This section summarizes the archaeological and historical settings of the Project Study Area, including the methods used for archaeological and architectural surveys, and the results of the cultural resources surveys for the Proposed Subtransmission Line Route and the alternative Subtransmission Line segments. Preliminary evaluations of eligibility for listing in the California Register of Historical Resources (CRHR) are made for all identified resources. This section also includes the results of Native American consultation and paleontological resource sensitivity within the Project Study Area.

Cultural resources consist of the material remains, environmental data, cultural traditions, and traditional places created by a past culture. These remains can include artifacts, ecofacts, architecture, human remains, and landscapes that are historically or archeologically significant.

Paleontology is the study of pre-Holocene (greater than 10,000 years before the present) remains of plants and animals typically preserved as fossils. Paleontological resources, which are defined as the fossilized remains of prehistoric plants and animals, are non-renewable resources that may include fossilized bones, teeth, shells, tracks, trails, and casts.

Regional Overview

Prehistoric Period

William Wallace (1955) and Claude Warren (1968) proposed the two most frequently cited prehistoric culture chronologies for Southern California. They emphasized past life-ways, protohistoric, and historical interpretations to establish a chronology of coastal occupation by Native American groups based on specific tool assemblages catering to different resource bases.

The accepted chronology for Southern California prehistoric times as proposed by William Wallace (1955) and Claude Warren (1968) follows.

- *Early Man Horizon*: Predating 6000 BC; is characterized by the presence of large projectile points and scrapers, suggesting a reliance on hunting rather than gathering
- *Milling Stone Horizon*: 6000 BC to 1000 BC; characterized by the presence of handstones, milling stones, choppers, and scraper planes; tools associated with seed gathering and shell fish processing with limited hunting activities; evidence of a major shift in the exploitation of natural resources
- *Intermediate Horizon*: 1000 BC to 750 AD; reflects the transitional period between the Milling Stone and the Late Prehistoric Horizons; little is known of this time period, but evidence suggests interactions with outside groups and a shift in material culture reflecting this contact
- *Late Prehistoric Horizon*: 750 AD to European contact; characterized by the presence of small projectile points; use of the bow and arrow; steatite containers and trade items, asphaltum; cremations; gravegoods; mortars and pestles; and bedrock mortars

Ethnohistorical Period (A.D. 1750–1850)

At the time of Spanish contact, the Temescal Canyon area and uplands to the east were occupied by several autonomous lineages of Luiseño Indians who had divided the valley and surrounding hillsides into tracts of land identified with specific village territories (Bean and Shipek 1978; Dubois 1908; Kroeber 1907, 1908; Phillips 1975; Shipek 1977; Sparkman 1908; Strong 1929). It is presumed that the Luiseño are the descendants of the late prehistoric peoples who occupied the area and represent one linguistic group of the Takic (Shoshonean) speakers who are postulated to have entered the area from the Great Basin at least 1200 years ago. The term Luiseño has historical origins that indicate they came within the jurisdiction of Mission San Luis Rey, founded in 1798. The native peoples in the area around Mission San Juan Capistrano, who were known historically as the Juaneño, spoke a dialect of the same language. Although they did not consider themselves as a unified group, the aboriginal inhabitants of the region recognized a common ancestry, language, tradition, cosmology, and lifeway. They were also related by culture, exchange, and linguistic affinity to the Gabrielino, Serrano, Cahuilla, and Cupeño who together form the historically recognized divisions of the "Shoshonean wedge," thought to have moved into Southern California from the deserts. These groups cannot be equated with tribal structure or political boundaries. Specific dialectical differences, histories, and specific ecological niches serve best to differentiate among groups and sub-groups within each designation. The village, usually represented by a dispersed ranchería with seasonally occupied temporary camps and territorially ascribed resource collection areas, comprises the basic Luiseño sociopolitical unit.

The Luiseño were culturally similar to other Takic-speaking tribes, but possessed a more rigid social structure and greater population density. A complicated system of social status, well-defined ruling families that linked rancherias within tribal territories, a sophisticated philosophical system associated with toloache rituals, and elaborate ritual paraphernalia, including sand paintings, are features that reflect the social structure and dense population of the Luiseño (Bean and Shipek 1978:550). Strong (1929) suggested that social organization was more complex among the populous coastal villages, and less so among smaller valley settlements. Exploitation of resource areas was strictly controlled by ownership of resource territories along family, lineage, and village lines. Sedentary villages were located in diverse ecological zones. Luiseño subsistence was also mixed, but acorns were the primary food resource. Villages appear to have been located near the necessary water sources for acorn leaching.

Historical Period

The historical period in western Riverside County can be divided into three distinct periods: the Spanish Mission period, the Mexican Rancho period, and the American period.

The Spanish Mission period in Riverside County can be defined by the Spanish exploration of the area beginning in 1769 and the establishment of the San Diego Presidio and the Missions San Diego, San Luis Rey, and San Juan Capistrano. However, the inland area remained relatively unexplored as the Spaniards clung to the coast near their missions and presidios. Juan Bautista de Anza first explored the area in 1774 when his expedition camped along the San Jacinto Valley. The County's first European resident, Leandro Serrano, obtained permission from the padres at Mission San Luis Rey to take five leagues of land in Temescal Valley in 1818. His proven ability with the Christianized native population during his service as majordomo at the mission made him a logical choice for settling the valley and securing the territory north of the mission against the Luiseños and Cupeño.

In 1821, Mexico successfully fought for independence from Spain. With Mexico's independence and the establishment of Serrano's Rancho, the Mexican Rancho period (1821-1948) started (Gunther 1984). The Mexican Rancho period was a lively and colorful period of California history. The Mexican Rancho period ended in 1848 as the Mexican War came to a close. After Mexico was defeated and the Treaty of Guadalupe Hidalgo was signed in 1848, California was ceded to the United States, beginning the American Period (1848–present).

Agriculture and mineral extraction continue to play a vital role in the region's economy, although the boom era of the 1880s has yet to be surpassed in industrial growth. The two main historic themes: rural settlement; and commercial, industrial, and agricultural development; continue to influence western Riverside County and constitute the contexts by which historical resources within the Area of Potential Effect can be interpreted and evaluated.

Record Search Results

A records search was conducted for a 0.5-mile wide corridor centered on the Proposed Subtransmission Line Route (Table 4.6-2). The record search identified five previously identified cultural resource sites within 200 feet of the Proposed Subtransmission Line Route. These previously recorded cultural sites include two prehistoric sites, one historical-period site, and two multicomponent sites located within the Proposed Subtransmission Line Route.

Field Survey Results

The archaeological field surveys conducted in March, April, June and August 2006 resulted in the relocation of seven of the 14 previously recorded sites and recording of 36 new archaeological sites, and 48 architectural sites on the Proposed Subtransmission Line Route and alternative segments. The previously recorded sites that could not be relocated may have been destroyed during new residential development and road construction.

Subtransmission Line

A total of 23 cultural resource sites were identified within the Proposed Subtransmission Line Route, including three previously recorded sites, and 20 newly recorded sites. The sites are shown in Table 4.6-1.

The California Register of Historic Resources (CRHR) eligibility recommendations for the archaeological sites and architectural sites in the Proposed Subtransmission Line Route are identified in Table 4.6-1. Twenty-three cultural resources sites were identified during the pedestrian field survey, but only two sites (CA-RIV-714/H and SRI-22) are eligible for the CRHR according to the guidelines stipulated in CEQA. These two sites include a multicomponent site that consists of a prehistoric village with a historical-period building foundation, and a historical-period site with occupation features.

Paleontological Resources

The Project Study Area is located within the San Jacinto River Valley and Temescal Canyon. Geologically, the Santiago Peak Volcanics, Estelle Mountain Volcanics, the Silverado Formation, alluvial fan deposits, axial channel deposits, and Mesozoic age metamorphic and non-marine sedimentary deposits characterize this area. Both the Santiago Peak Volcanics and the Estelle Mountain Volcanics consist of rhyolite, breccia, welded tuff, quartz, basalt, and andesite. The alluvial fan deposits and axial channel deposits are formed from recent alluvium originating from highland streams, and are primarily comprised of sand and silt from volcanic rock sources.

The two volcanic formations, alluvial fan deposits, axial channel deposits, and the Mesozoic age metamorphic and non-marine sedimentary deposits are not conducive to the formation and preservation of fossils. However, the Silverado Formation, which appears in small pockets along the Temescal Canyon Basin within the Project Study Area, is a marine sedimentary formation consisting of sandstone, siltstone, and conglomerates. The Silverado Formation may form and preserve fossils within the Project Study Area, but no other sections of the Project Study Area are conducive to the formation or preservation of fossils.

Native American Consultation

Information was requested regarding prehistoric, historic, and/or ethnohistoric land use and sites of Native American traditional or cultural value that may exist within the project vicinity, as depicted in the Sacred lands database. A list of interested Native American tribal groups and individuals for the Project Study Area was also requested. The Native American Heritage Commission (NAHC) indicated that no Native American cultural resources were recorded in the NAHC Sacred lands file.

4.6.2 REGULATIONS, PLANS, AND STANDARDS

Federal

All lands that are administered by federal agencies are subject to Section 106 of the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires agencies to consider the effects of projects on significant historic resources that are included in or eligible for listing in the National Register of Historic Properties (NRHP). Historic resources include those dating to the prehistoric or historical period and can range from Native American archaeological sites to historically significant buildings that are 50 years old or older. Cultural resources are evaluated for significance with reference to their eligibility for listing in the NRHP, according to criteria published in Title 36, Part 60.4 of the Code of Federal Regulations (36 CFR 60.4).

State

Cultural resources as defined in CEQA include prehistoric and historic era archaeological sites, districts, and objects; historic buildings, structures, objects and districts; and traditional/cultural sites or the locations of important historic events. CEQA Guidelines (Section 15064.5) state that a project may have a significant environmental effect if it causes a substantial adverse change in the significance of an historic resource. Additionally, the CPUC must consider properties eligible for listing on the California Register of Historical Resources (CRHR) or that are defined as a unique archaeological resource in CEQA Section 21083.2.

Local

The Riverside County General Plan Section 6.1.3 states that CEQA guidelines for cultural resources should be followed when within the County of Riverside and each of the 14 cities. Additionally, Multiple Species Habitat Conservation Plan (MSHCP) Conservation Areas have been created in order to protect significant archaeological resources and other environmental factors. Within the MSHCP Conservation Areas no new large development is permitted to prevent environmental effects.

4.6.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would cause a potentially significant impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature
- Disturb any human remains, including those interred outside of formal cemeteries

Table 4.6-1: Summary of Cultural Resources within the Proposed Subtransmission Line Route

	Prehistoric Not CRHR Eligible	Pre-historic CRHR Eligible	Historic Not CRHR Eligible	Historic CRHR Eligible	Historic Eligibility Can Not Be Determined	Multi-Component Not CRHR Eligible	Multi-Component CRHR Eligible	Historic Architectural Not CRHR Eligible	Historic Architectural CRHR Eligible	Historic Architectural Eligibility Can Not Be Determined	TOTAL
Segment E-1	2	0	2	0	0	0	1	0	0	0	5
Segment C-1	4	0	0	0	0	1	0	1	0	0	6
Segment C-3	0	0	0	0	0	0	0	0	0	0	0
Segment C-4	0	0	2	0	0	0	0	0	0	0	2
Segment C-6	0	0	1	0	0	0	0	0	0	0	1
Segment W-1	1	0	5	1	0	0	0	1	0	0	8
Segment W-4	0	0	0	0	1	0	0	0	0	0	1
Segment-W-8	0	0	0	0	0	0	0	0	0	0	0
Segment W-10	0	0	0	0	0	0	0	0	0	0	0
TOTAL	7	0	10	1	1	1	1	2	0	0	23

SOURCE: SRI 2006

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4.6.4 IMPACT ANALYSIS

Impact Summary

The Proposed Project would not cause an adverse change to the significance of a historical, archaeological, or paleontological resource nor would it disturb any known human remains. The Proposed Project would be limited to less than significant risk by proper management and other precautionary measures. Impacts of the Proposed Project would not cause significant adverse effect to the cultural resources located within the Proposed Project Study Area.

Cultural Resources

Construction Impacts

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line Route and telecommunications line could potentially impact 23 cultural resource sites. Only two sites (CA-RIV-714/H and SRI-22) are eligible for listing on the CRHR. These two sites could be avoided during construction by shifting the Proposed Subtransmission Line Route within the Proposed Project Study Area or by spanning the site by not placing any new utility poles or access roads within site boundaries. The eligibility of two other sites has not been determined. Effects to the sites would be significant if they are eligible for the NRHP. Potentially significant impacts would be avoided by implementing SCE Proposed Measures.

There are no known human remains in the Project Study Area. There is a possibility that unidentified remains could be identified during grading or excavation activities. No significant impacts to cultural resources would occur during construction with implementation of SCE Proposed Measures.

Substations. Improvements to the Valley and Ivyglen substations would have no effect on cultural resources because all work would take place in previously disturbed areas. SCE Proposed Measures would be implemented if unexpected subsurface resources were encountered during excavation.

Operational Impacts

Subtransmission Line and Telecommunications Line. There would be no operational impacts on cultural resources along the Proposed Subtransmission Line Route and telecommunications line route. Once the Proposed Subtransmission Line and telecommunications line are constructed, the only activities that would occur would be regular maintenance and repairs, such as pole and insulator replacements. These activities would not have an effect on significant archaeological sites within the Project Study Area as long as the sites are avoided during construction. Therefore, no significant impacts to cultural resources would occur during operations.

Substations. Operation of the substation improvements would have no impact on cultural or historic resources.

Paleontological Resources

Construction Impacts

Subtransmission Line and Telecommunications Line. The Temescal Canyon Basin portion of the Project Study Area is underlain by the Silverado Formation (see the geologic map in Figure 4.7-3 in Section 4.7 Geology and Soils). The Silverado Formation is a marine sedimentary formation that consists of sandstone, siltstone, and conglomerates that may form and preserve fossils. Other portions of the Proposed Subtransmission Line Route are underlain by igneous rocks, which are not conducive to the formation or preservation of fossils.

The construction of the Proposed Subtransmission Line and telecommunications line would have no impact to paleontological resources for most of the Project Study Area. There is a potential for significant impacts to paleontological resources within Temescal Canyon. SCE Proposed Measures would avoid significant impacts to cultural resources.

Operational Impacts

Subtransmission Line and Telecommunications Line. Operation and maintenance impacts on paleontological resources have a low potential for occurrence and should be less than significant. The only potential for impacting resources would be during the replacement of poles or other ground disturbing activities. Implementation of SCE Proposed Measures would avoid significant impacts.

Substations. Operation of the substation improvements would have no impact on paleontological resources.

4.6.5 SCE PROPOSED MEASURES

CULT-SCE-1: If previously unidentified cultural resources are unearthed during construction activities, construction shall be halted in the immediate area and directed away from the discovery until a qualified archaeologist assesses the significance of the resource. The archaeologist would recommend appropriate measures to record, determine eligibility for the NRHP, avoid (preserve), or recover the resources such that the information value of eligible resources.

CULT-SCE-2: If human remains are encountered during the construction or any other phase of development, work in the area of the discovery shall be halted in that area and directed away from the discovery. No further disturbance would occur until the county coroner makes the necessary findings as to the origin pursuant to Public Resources Code 5097.98-99, Health and Safety Code 7050.5. If the remains are determined to be Native American, the Native American Heritage Commission (NAHC) would be notified within 24 hours as required by Public Resources Code 5097. The NAHC would notify the designated Most Likely Descendant who would provide recommendations for the treatment of remains within 24 hours. The NAHC mediates any disputes regarding treatment of remains. SCE would implement recommendations as required.

CULT-SCE-3: SCE shall avoid and/or minimize impacts to cultural resources, as included as part of the Proposed Project design and are included in SCE standard construction and operation protocols. Such avoidance and/or minimization of impact will include, but is not limited to, moving the Subtransmission Lines Route to avoid significant sites and spanning the distance of significant sites between two poles.

With the implementation of these SCE Proposed Measures, impacts to cultural resources would be less than significant.

4.6.6 MITIGATION MEASURES

Impacts to cultural resources would be less than significant, and therefore, no mitigation is required.

4.6.7 PROJECT ALTERNATIVES

The impact comparison Table 4.6-2 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.6-2: Cultural Resources Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Would cross further northwest than Proposed Subtransmission Line Route before heading west to Highway 74	Would cross through 41 cultural resources	Greater impact	Same as Proposed Route
C-2	No significant change	Would cross through 16 cultural resources	Equal impact	Same as Proposed Route
C-7	Follows Highway 74 along the west side from Conard Avenue to I-15 Freeway	Would cross through no additional cultural resources	Equal impact	Same as Proposed Route
W-2	Follows I-15 Freeway north from Nichols Road to Concordia Ranch Road, proceeds west along the north side of I-15 Freeway	Would cross through 5 cultural resources	Less Impact	Same as Proposed Route
W-3	No significant change	Would cross through no cultural resources	Equal Impact	Same as Proposed Route
W-5	No significant change	Would cross through 1 cultural resource	Equal Impact	Same as Proposed Route

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4.7 Geology and Soils

4.7.1 ENVIRONMENTAL SETTING

Topography and Physiography

The Proposed Project would be located in the San Jacinto Valley in Southern California, south and east of the City of Los Angeles. The San Jacinto Valley is bounded by the San Jacinto Mountains to the east, the Black Hills and the Santa Ana Mountains to the south, and the Santa Ana Valley and the Inland Empire to the northwest. The region is part of the Peninsular Ranges Geomorphic Province of Southern California (CGS 2002). Elevations in the province range from 1,200 feet above mean sea level (amsl) to 10,804 amsl at Mount San Jacinto in the San Jacinto Mountains.

The Project Study Area is located east of the Santa Ana Mountains. The western portion of the Project Study Area is located along a depression formed by the Elsinore Fault known as Temescal Canyon. This canyon is bounded by steep hillsides and trends from southeast to northwest along the Elsinore and Chino Faults. The Santa Ana Mountains (sometimes referred to as the Elsinore Mountains) lie to the south of the Project Study Area.

The eastern portion of the Project Study Area is on a flat to gently rolling alluvial plain formed by the Santa Jacinto River (part of the Perris Valley) with some small hills as the Proposed Subtransmission Line Route approaches Highway 74 near the end of Segment E-1. Figure 4.7-1 shows major geomorphic features in the Project Study Area.

Subtransmission Line

The eastern portion of the Proposed Subtransmission Line Route crosses relatively flat land near the San Jacinto River at an elevation of roughly 1,350 feet amsl. The Proposed Subtransmission Line Route continues west through hilly areas just north of the City of Lake Elsinore and then generally follows the path of Temescal Wash through Temescal Canyon until terminating at the Ivyglen Substation. The nearby mountain slopes of the Santa Ana Mountains are fairly steep with incised drainage courses that carry seasonal runoff northwest to Temescal Wash.

Substations

The Valley Substation is not located near any prominent physical features. The Ivyglen Substation is near the base of the Santa Ana Mountains approximately 0.5 mile south of Temescal Wash. It is located on a gently sloping area just off Temescal Canyon Road. The substation is also approximately 0.25 mile from I-15 (the Corona Freeway).

Telecommunications Line

The telecommunications line would follow the Proposed Subtransmission Line Route with the exception of portions of the line that would be installed in underground conduit near the Valley and Ivyglen substations.

Soils

Several soil types are present in the Project Study Area. Soils in the Project Study Area are derived from deposits of fine sediment and alluvial materials, primarily from granitic rocks, schist, sandstone, and shale sources originating along the eastern slopes of the Santa Ana and San Jacinto Mountains (NRCS 1971; NRCS 2006). The soils present near the Project Study Area belong primarily to five distinct soil series: Greenfield, Cajalco, Friant, Fallbrook, and Monserate. Table 4.7-1 describes soil types present along the Proposed Subtransmission Line Route segments.

Table 4.7-1: Project Study Area Soils Characteristics

Soil Type	Description	Proposed Route Segment								
		E-1	*C-1*	*C-3*	*C-4*	*C-6*	*W-1*	*W-4*	*W-8*	*W-10*
Greenfield	The Greenfield series consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent.				☑	☑	☑	☑	☑	☑
Cajalco	The Cajalco soils are well drained, moderately permeable and occur on gently sloping to steep uplands in areas of deeply weathered, basic igneous rocks. Average annual rainfall is 9 to 16 inches and the average annual temperature 62 degrees F. The Cajalco soils are well drained, moderately permeable and occur on gently sloping to steep uplands in areas of deeply weathered, basic igneous rocks.			☑	☑					
Friant	The Friant series consists of shallow, well drained soils that formed in material weathered from mica schist, quartz schist and gneiss. Friant soils are on mountainous uplands and have slopes of 9 to 75 percent.	☑	☑	☑						
Fallbrook	The Fallbrook series consists of deep, well drained soils that formed in material weathered from granitic rocks. Fallbrook soils are on rolling hills and have slopes of 5 to 75 percent.	☑	☑							
Monserate	The Monserate soils are on nearly level to moderately steep old dissected terraces and fans at elevations of 700 to 2,500 feet. The soils formed in alluvium derived principally from granitic rocks. The climate is dry subhumid mesothermal with long dry summers and mild moist winters.	☑								

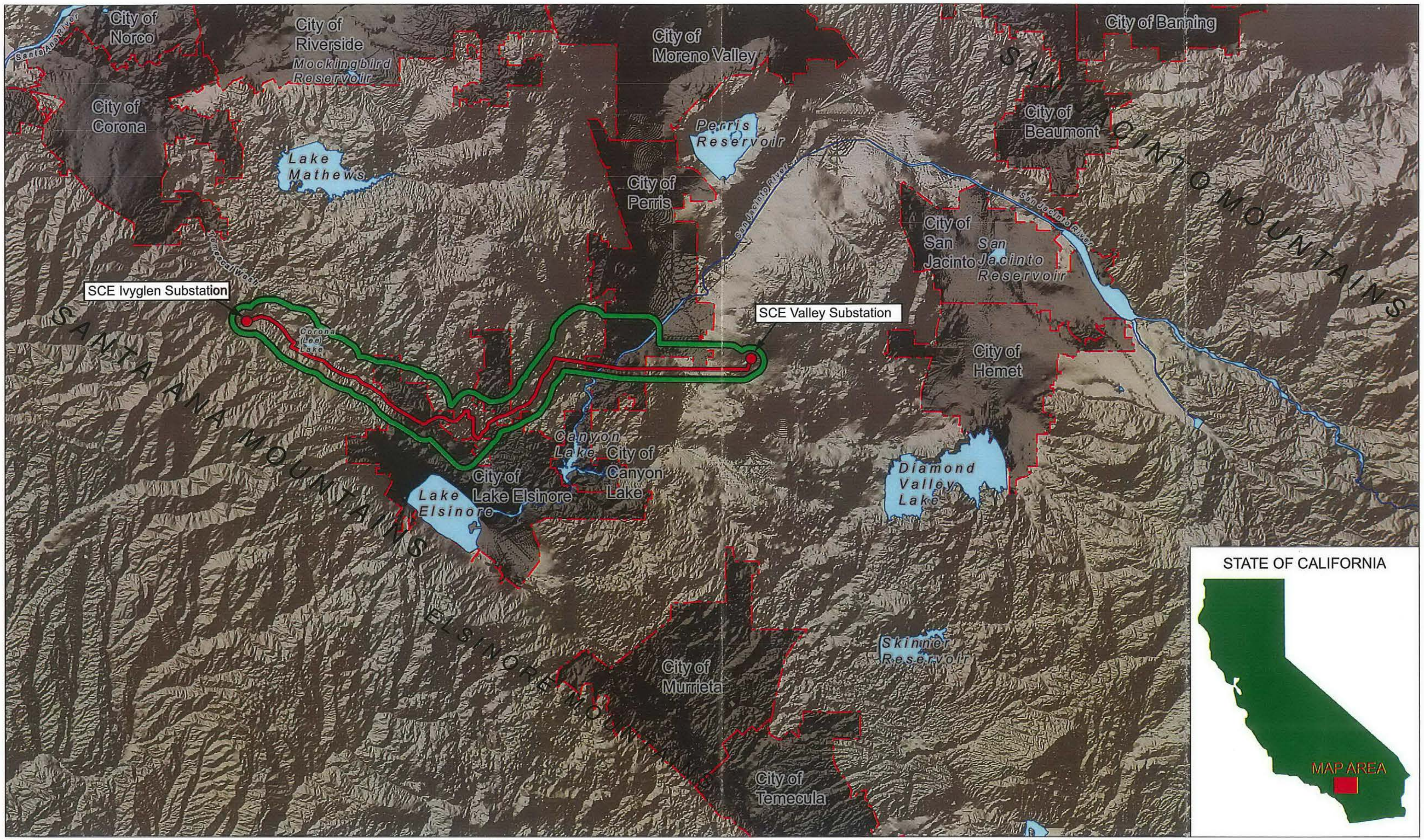
SOURCE: USDA 1971, USCDA 2006, and MHA 2006

Soils of the eastern portions of the route are typically assigned the to Friant or Fallbrook association, which comprises well-drained to somewhat excessively drained shallow to deep soils formed on metasedimentary bedrock. The surface layer consists of fine sandy loam and gravelly loam (NRCS 1971).

Much of the central portion of the Project Study Area is comprised of soils from the Greenfield association, which comprises very deep, well drained to excessively drained soils formed in granitic alluvium on small alluvial fans and on floodplains. The surface layer typically consists of sand to sandy loam (NRCS 1971).

The western portion of the Project Study Area is underlain by soils assigned to the Cajalco-Temescal-Las Posas association, which comprises well-drained shallow to moderately deep soils

Figure 4.7-1: Major Geomorphic Features in the Project Study Area



SOURCE: U.S. Geological Survey, EROS Data Center, Sioux Falls, SD 2006, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Project Study Area Boundary
- Proposed Route
- Substation
- Water
- City Area

0 1.5 3 6 9 12 15 Miles

N W E S

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that formed on gabbro or latite bedrock. The surface layer typically consists of fine sandy loam and loam (NRCS 1971).

The soil types occurring within the Project Study Area are all generally well drained, consisting of loamy sands, coarse sandy loam, and rocky sandy loam. Soils in the Project Study Area are moderately alkaline. The soils in the Project Study Area have relatively low fertility due to the dry climate, the presence of alkaline salts, and the lack of substantial organic material. Figure 4.7-2 shows the soils in relation to the Proposed Project Study Area. All soils in the area are prone to moderate erosion.

Geology

Geologic Units

The Project Study Area crosses the Elsinore Valley, a pull-apart depression formed by movement along en echelon strands of the active Elsinore Fault Zone and into the Perris Valley. The Santa Ana Mountains uplift, west of the Elsinore Valley, is dominated by primarily granitic rocks of Cretaceous age belonging to the Peninsular Ranges batholith (see Figure 4.7-3).

The Elsinore Valley floor is comprised of unconsolidated sand, silt, and clay of late Pleistocene and Holocene age. Hills along the eastern portion of the Project Study Area are comprised of metasedimentary rock, nonmarine and marine sandstone, siltstone, and claystone. Areas near the western portion of the Project Study Area are typically alluvium deposits near Temescal Wash or granitic rocks belonging to the Peninsular Ranges. Erosion of the mountains has created gravel, sand, and silt in the area (Morton 2004).

Faulting

Faults are fractures or lines of weakness in the earth's crust. Rocks on one side of a fault are offset relative to the same rocks on the other side. Sudden movement along a fault generates an earthquake. Surface faults exhibiting horizontal movement are called strike-slip faults (e.g., Elsinore Fault).

The major fault in the Project Study Area is the Elsinore Fault; a strand of the fault (the Ivyglen Fault) is located directly under the Ivyglen Substation. The Elsinore Fault has several splays near the western portion of the Project Study Area. The Elsinore Valley is a pull-apart depression formed at a right (releasing) step-over in the Elsinore Fault system (Moore 2004).

The California Geological Survey (previously the California Division of Mines and Geology) developed criteria for classifying fault activity for the Alquist-Priolo Earthquake Fault Zoning Program (Hart and Bryant 1999). By definition, an active fault is one that is "*sufficiently active and well-defined,*" with evidence of surface displacement within Holocene time (about the last 11,000 years). These terms are defined in Special Publication 42 (Hart and Bryant 1999) and reproduced below.

> "*Sufficiently active.* A fault is deemed sufficiently active if there is evidence of Holocene surface displacement along one or more of its segments or branches. Holocene surface displacement may be directly observable or inferred; it need not be present everywhere along a fault to qualify that fault for zoning."
>
> "*Well-defined.* A fault is considered well-defined if its trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface. The fault may be identified by direct observation or by indirect methods (e.g., geomorphic evidence). The critical consideration is that the fault, or some part of it, can be located in the field with sufficient precision and confidence to indicate that the required site-specific investigations would meet with some success."

A potentially active fault displaces Quaternary age deposits (last 1.6 million years). Potentially active faults also represent possible surface rupture hazards. In contrast to active or potentially active faults, faults considered inactive have not moved in the last 1.6 million years.

The Elsinore Fault consists of multiple strands, a number of which are recognized as active and zoned by the State of California under the Alquist-Priolo Act (Hart and Bryant 1999). Risk of surface rupture along these zoned active traces is substantial.

Historic, active and potentially active faults in the project region are shown in Figure 4.7-4.

Seismicity

The Project Study Area, including the Elsinore and Perris Valleys, contains both active and potentially active faults. The Elsinore Fault is believed to be capable of generating earthquakes with moment magnitudes in the range of 6.5 to 7.5, with a recurrence interval of approximately 250 years between major events. Smaller events may occur more frequently. The entire Project Study Area is likely to experience repeated moderate to strong ground shaking generated by the Elsinore Fault in the foreseeable future. The main trace of the Elsinore fault zone has only seen one historical event greater than magnitude 5.2, the magnitude 6 earthquake of 1910 near Temescal Valley. This earthquake produced no known surface rupture and caused little damage.

A number of the Peninsular Ranges' other active faults, shown in Figure 4.7-4 have the potential to cause strong ground shaking. Significant earthquakes and moderate tremors are common in Southern California, such as the 1971 San Fernando (Richter magnitude 6.7), 1992 Landers (Richter magnitude 7.0), and the 1994 Northridge (Richter magnitude 6.7) earthquakes. These earthquakes caused extensive damage throughout Southern California (Maulchin 1996, USNEIC 2006). Table 4.7-2 summarizes recurrence intervals and maximum credible earthquake (MCE) events for important faults in the vicinity surrounding the Project Study Area, including the Elsinore Fault.

Soil and Geologic Hazards

Erosion

Soils can be subject to erosion caused by both natural processes and human activities. The soils in the Project Study Area exhibit a moderate potential for wind and water erosion. Wind erosion happens primarily during the summer and fall when the weather is hot and windy. Soils lose moisture and cohesiveness under summer conditions. The winter and spring are associated with greater levels of precipitation and increased erosion caused by stormwater runoff. Sporadic and torrential rains can cause flash floods and significant erosion throughout the region (County of Riverside 2003).

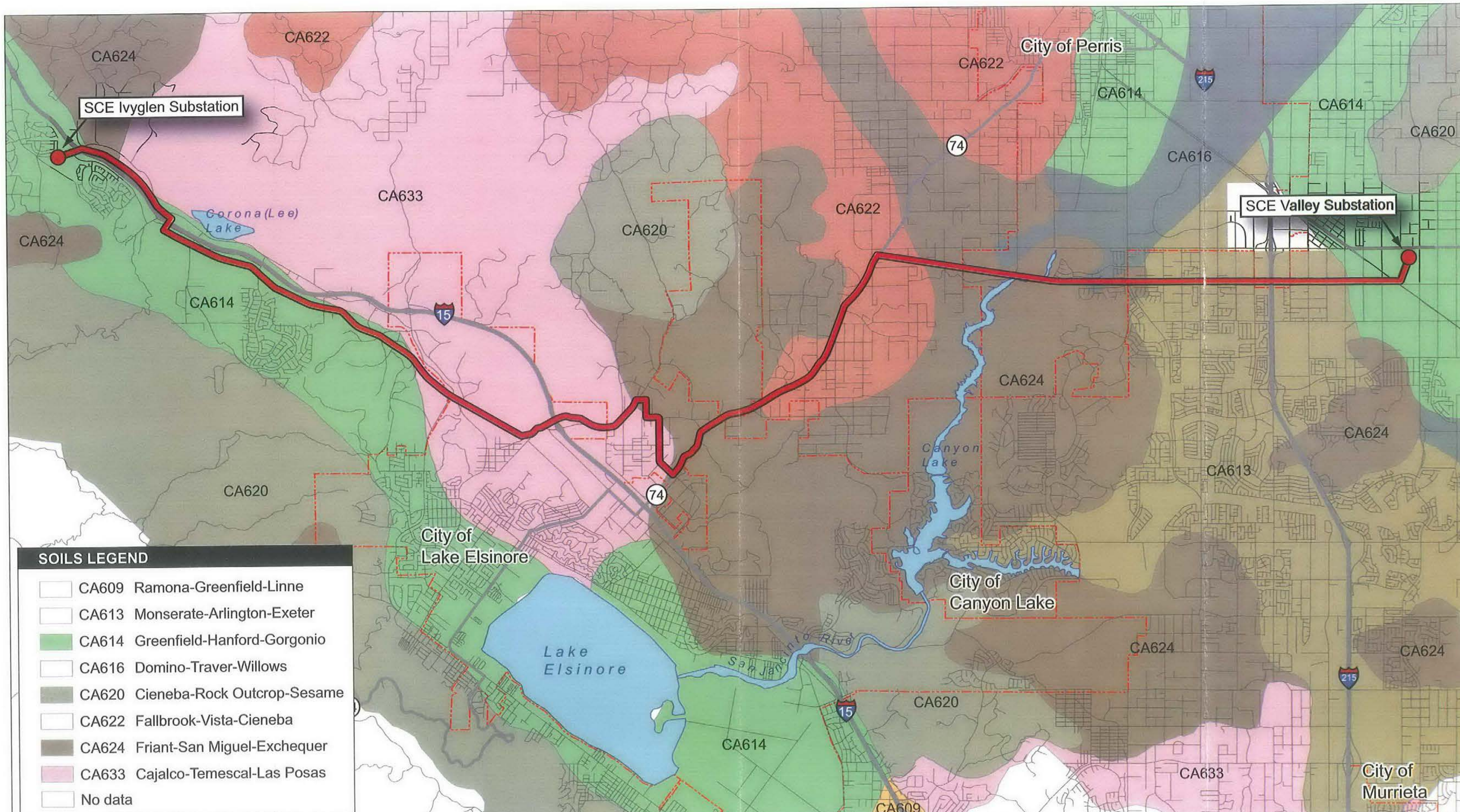
Expansive Soils

Expansive soils contain significant amounts of clays that expand when they become wet and can cause damage to foundations. Soils in the Project Study Area are not expansive (USDA 2006).

Hydrocompaction

Hydrocompaction occurs when collapsible soils are subject to increased moisture content. Collapsible soils are generally low-density fine-grained combinations of clay and sand left by mud flows that have dried, leaving tiny air pockets. When the soil is dry, the clay is strong enough to bond the sand particles together. When the clay becomes wet, the moisture alters the cementation structure and the soil's strength is compromised, causing collapse or subsidence.

Figure 4.7-2: Soils in the Project Study Area



SOURCE: USDA Soil Conservation Service 1971, Santa Ana Watershed Project Authority 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

Proposed Route
Interstate Highway
State Route
Substation
Road
City Boundary
Water

N W E S

0 0.5 1 2 3 4 Miles

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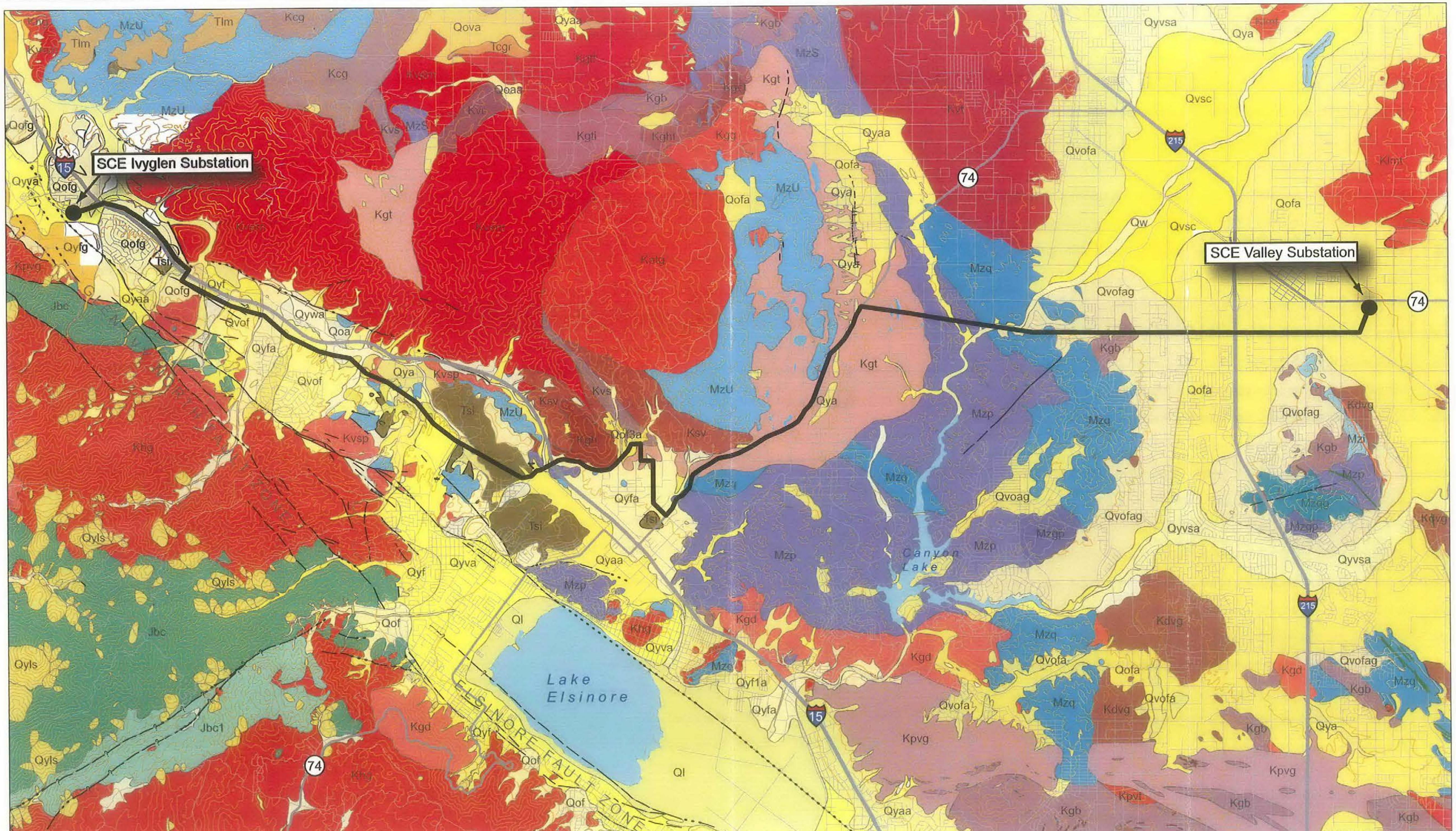
Figure 4.7-3: Geologic Units and the Project Vicinity



SOURCE: U.S. Geological Survey 2004, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

Proposed Route
Substation
Water
Interstate Highway
State Route
Local Road

*Geologic Unit Legend Continues on Back of Map

0 0.5 1 2 3 4 Miles

N S E W

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Figure 4.7-3 *(Continued)*: Geologic Units and the Project Vicinity

LEGEND

Qw	Wash Deposits (late Holocene)
Ql	Lacustrine deposits (late Holocene)
Qvsc	Alluvial valley deposits (late Holocene) silty clay grain size
Qya	Young axial channel deposits (Holocene and latest Pleistocene)
Qyaa	Young axial channel deposits (Holocene and latest Pleistocene) arcaneous grain size
Qyf	Young alluvial fan deposits (Holocene and latest Pleistocene)
Qyfa	Young alluvial fan deposits (Holocene and latest Pleistocene) arcaneous grain size
Qyfa1	Young alluvial fan deposits, Unit 1 (Holocene and latest Pleistocene) arcaneous grain size
Qyfg	Young alluvial fan deposits (Holocene and latest Pleistocene) gravel grain size
Qyls	Young landslide deposits (Holocene and latest Pleistocene)
Qyva	Young alluvial valley deposits (Holocene and late Pleistocene)
Qyvsa	Young alluvial valley deposits (Holocene and late Pleistocene) silty sand
Qywa	Young wash deposits (Holocene and latest Pleistocene) arcaneous grain size
Qoa	Old axial channel deposits (late to middle Pleistocene)
Qoaa	Old axial channel deposits (late to middle Pleistocene) arcaneous grain size
Qof	Old alluvial fan deposits (late to middle Pleistocene)
Qofa	Old alluvial fan deposits (late to middle Pleistocene) arcaneous grain size
Qof3a	Old alluvial fan deposits, Unit 3 (late to middle Pleistocene) arcaneous grain size
Qofg	Old alluvial fan deposits (late to middle Pleistocene) gravel grain size
Qova	Old alluvial valley deposits (late to middle Pleistocene) arcaneous grain size
Qvoag	Very old axial channel deposits (middle to early Pleistocene) gravel size
Qvof	Very old alluvial fan deposits (middle to early Pleistocene)
Qvofa	Very old alluvial fan deposits (middle to early Pleistocene) arcaneous grain size
Qvofag	Very old alluvial fan deposits (middle to early Pleistocene) arcaneous and gravel grain size
Tlm	Lake Mathews Formation (Miocene)
Tcgr	Rhyolite clast conglomerate of Lake Mathews Area (Miocene?)
Tsi	Silverado Formation (Paleocene)
Kpvt	Tonalite foliated biotite-hornblende
Klmt	Tonalite medium to coarse-grained
Kcg	Monzogranite
Kdvg	Granodiorite to tonalite of Domenigoni Valley

Kgct	Coarse-grained biotite-hornblende tonalite
Kpvg	Monzonite to granodiorite
Kgg	Hypersthene monzogranite
Kgh	Hypabyssal tonalite
Kght	Heterogeneous tonalite
Kgt	Massive textured tonalite
Kgti	Tonalite containing abundant mesocratic inclusions
Kgtf	Foliated tonalite
Khg	Heterogeneous granitic rocks (Cretaceous)
Kgb	Gabbro (Cretaceous)
Ksv	Intermixed Estelle Mountain volcanics of Herzig (1991) and Cretaceous? sedimentary rocks (Cretaceous?)
Kgd	Granodiorite, undifferentiated (Cretaceous)
Kvr	Rhyolite of Estelle Mountains volcanics Herzig (1991) (Cretaceous)
Kvs	Intermixed Estelle Mountain volcanics of Herzig (1991) and Mesozoic sedimentary rocks (Mesozoic)
Kvsp	Santiago Peak Volcanics (Cretaceous)
Kvem	Estelle Mountain volcanics of Herzig (1991) (Cretaceous)
Katg	Granodiorite of Arroyo del Toro pluton (Cretaceous)
Jbc	Bedford Canyon Formation (Jurassic)
Jbc1	Bedford Canyon Formation, Unit 1 (Jurassic)
Mzgp	Intermixed graywacke and phyllite (Mesozoic)
Mzi	Interlayered phyllite (or schist) and quartzite (Mesozoic)
Mzp	Phyllite (Mesozoic)
Mzq	Quartz-rich rocks (Mesozoic)
Mzqg	Intermixed quartzite and graywacke (Mesozoic)
MzS	Schist (Mesozoic)
MzU	Mesozoic metasedimentary rocks, undifferentiated (Mesozoic)

- Kcto, zone of tourmalinized monzogranite
- Kg, granitic dike
- Kgbd, gabbroic dike
- Kgbf, fine-grained hornblende gabbro dike
- Kld, quartz latite dike
- Klmp, granitic pegmatite dike
- Kp, granitic pegmatite dike
- Kpvp, pegmatite dike
- Kvspi, porphyritic dike
- Mzmn, manganese bearing rock
- Contact, approx. located
- Contact, certain
- Fault scarp, approx. located
- Fault scarp, certain
- Fault, approx. located
- Fault, approx. located, queried
- Fault, certain
- Fault, concealed
- Fault, inferred
- Ground fissure
- Landslide scarp, certain
- Map boundary
- Normal fault, approx. located
- Normal fault, certain
- Normal fault, concealed
- Scratch boundary
- Subsidence scarp
- Suture
- Thrust fault, approx. located
- Thrust fault, certain
- Thrust fault, concealed

SOURCE: U.S. Geological Survey 2004 and MHA Environmental Consulting, Inc. 2006

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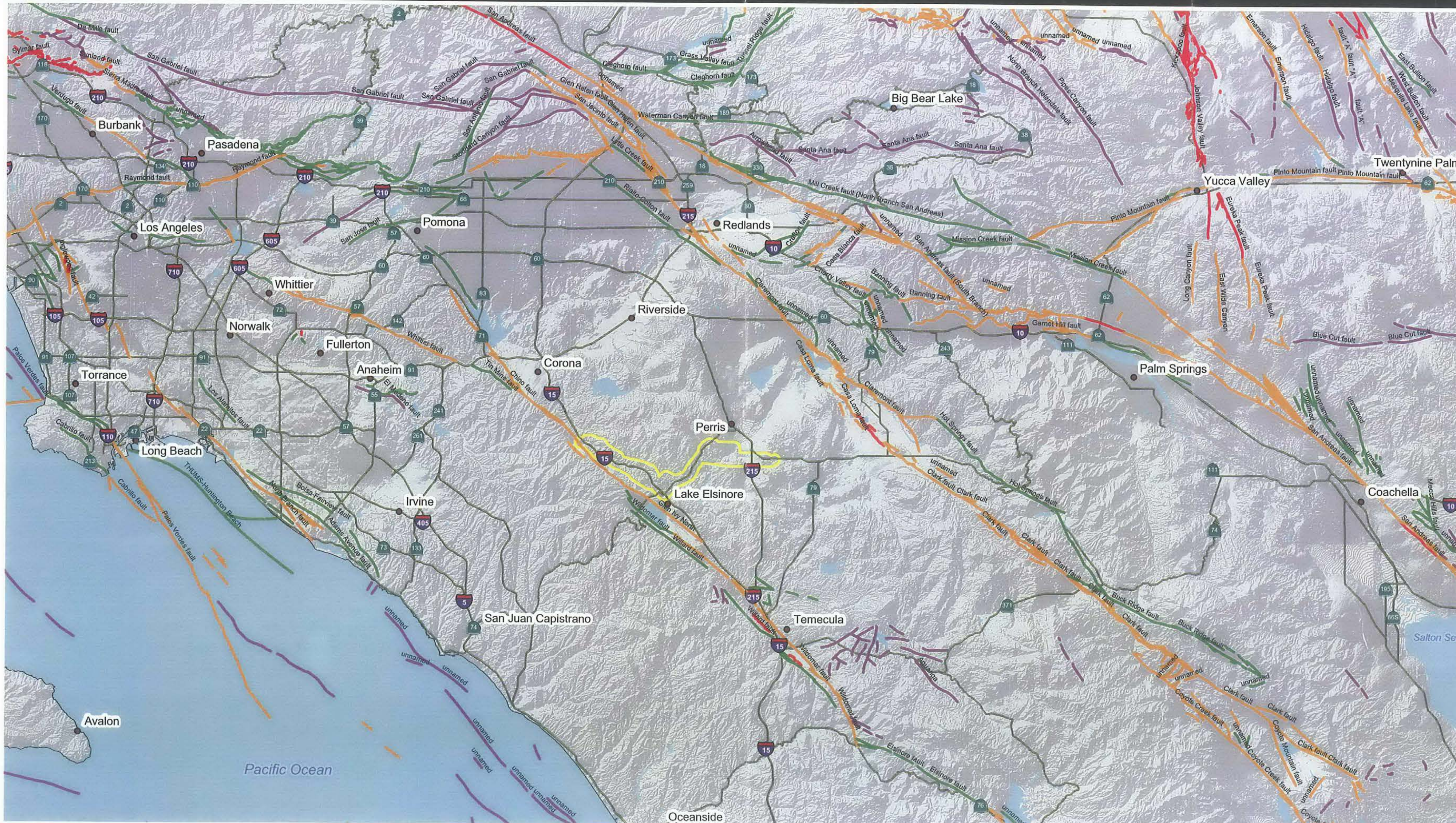
Figure 4.7-4: Regional Fault Map



SOURCE: Bryant 2005

LEGEND **Fault Classification (Recency of Movement):**

- Historic Faults (<200 years)
- Holocene Faults (<11,000 years)
- Late Quaternary Faults (<700,000 years)
- Quaternary Faults (<1,600,000 years)

Project Study Area Boundary

N W E S

0 5 10 20 Miles

1" = 10 Miles

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Table 4.7-2: Maximum Credible Earthquake and Recurrence Interval for Southern California Faults

Fault	Approximate Distance to Project Study Area (miles)	Magnitude	Approximate Recurrence Interval
Whittier	12	6.0-7.2 Mw	Unknown
Elsinore (Source of the Laguna Salada fault rupture in 1892. Magnitude 7.0 Mw.)	<1	6.5-7.5 Mw	250 years
San Jacinto	8	6.5-7.5 Mw	100-300 years
San Andreas	21	6.8-8.0 Mw	20-300 years
North Frontal Fault of San Bernardino Mountains	35	6.0-7.1 Mw	Uncertain
Note: Mw = Richter Magnitude			

SOURCE: USGS NEIC 2006, Sowers 1994

It is likely that collapsible soils are present in the area, but collapsible soils have not been mapped to specific locations (County of Riverside 2003).

Land Subsidence and Fissure

Land subsidence is normally the result of fluid withdrawal from compressible sediments. When fluid is withdrawn, the effective pressure in the drained sediments increases. Compressible sediments are then compacted due to overlying pressures no longer being compensated by hydrostatic pressure from below. Subsidence and associated fissuring have occurred in a variety of places in Riverside County due to fluctuating (rising and falling) groundwater tables. Alluvial valley regions, such as the Perris Valley and Elsinore Valley, are particularly susceptible to subsidence (City of Perris General Plan 2005).

Surface Fault Rupture

Surface fault rupture occurs when movement along a fault trace causes displacement of surface deposits. This may result from a large earthquake or from "creep" along a fault without an associated earthquake. Several factors may determine if an earthquake would cause surface rupture, such as earthquake magnitude and depth. The sense and nature of the fault rupture can vary for different faults or even along different segments of the same fault. Ground rupture is considered more likely along active faults (Mualchin 1996).

The Ivyglen Substation, the western terminus of the Proposed Subtransmission Line Route and the telecommunications line, is located approximately 200 feet from the Elsinore Fault Zone as delineated by the Digital Database of Quaternary Faults from the Fault Activity Map of California. Fault zones delineated by the database are not necessarily the same as zones depicted on the California Geologic Survey (CGS) Alquist-Priolo Zone Earthquake Fault Zone maps. Fault zones delineated by the database are intended to provide information for those concerned with land use on or near geologic faults in California. These fault zones may not correspond exactly with zones delineated by Alquist-Priolo fault zone maps (Bryant 2005). Designated fault hazard zones in the area are depicted on Figure 4.7-5.

Ground Shaking

Areas most susceptible to intense ground shaking are those located closest to the earthquake-generating fault, as well as areas underlain by thick, loosely unconsolidated and water saturated sediments. Ground movement during an earthquake can vary depending on the overall magnitude, distance from the fault, focus of the earthquake energy, and type of geologic materials underlying the site (Mualchin 1996).

Magnitude is the measure of energy released in an earthquake, while intensity measures the ground shaking effects at a particular location. Ground shaking intensity varies substantially depending on underlying substrate at a particular location. Areas atop bedrock typically experience less severe ground shaking than those underlain by loose, unconsolidated materials.

The entire Project Study Area would likely be subject to strong ground shaking in the event of a major earthquake in the project region (County of Riverside 2003).

Liquefaction

Unconsolidated soils that are water saturated may lose cohesion, and they are converted to a fluid-like state during severe ground shaking. This phenomenon is called liquefaction. It results from loss of soil shear strength induced by rapid ground shaking. Liquefaction can occur in areas characterized by less cohesive, granular materials that are water-saturated at depths less than 40 feet. Saturated unconsolidated alluvium exposed to moderate to high earthquake intensities may be susceptible to liquefaction.

The State of California Geological Survey: Seismic Hazard Mapping Program has not yet issued seismic hazards maps for the Project Study Area under the mapping program mandated by the Seismic Hazards Mapping Act. Mapping is planned for the Lake Elsinore and Wildomar quadrangles in coming years (USGS 2006).

Liquefaction susceptibility generally ranges from low to moderate on much of the valley floor to high in areas just north of Lake Elsinore. Figure 4.7-5 shows liquefaction hazards in the Project Study Area based on preliminary data collected by SCE (Earth Consultants 2000).

Landslide Hazard

Landslides are masses of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. Slides can result from certain geologic features, slope steepness, excessive rainfall, earthmoving disturbance, and seismic activity. Excavation and development activities often increase the incidence of landslides. Shaking during an earthquake may cause materials on a slope to lose cohesion and collapse.

Data on landslide susceptibility in the Project Study Area are not yet available from the State of California Geologic Survey. Landslides typically occur on steep slopes. The Project Study Area traverses hills and slopes that may be susceptible to landslides both seismically and non-seismically induced. The following segments traverse or approach areas that may be susceptible to landslides based on slope and soil types (USDA 2006):

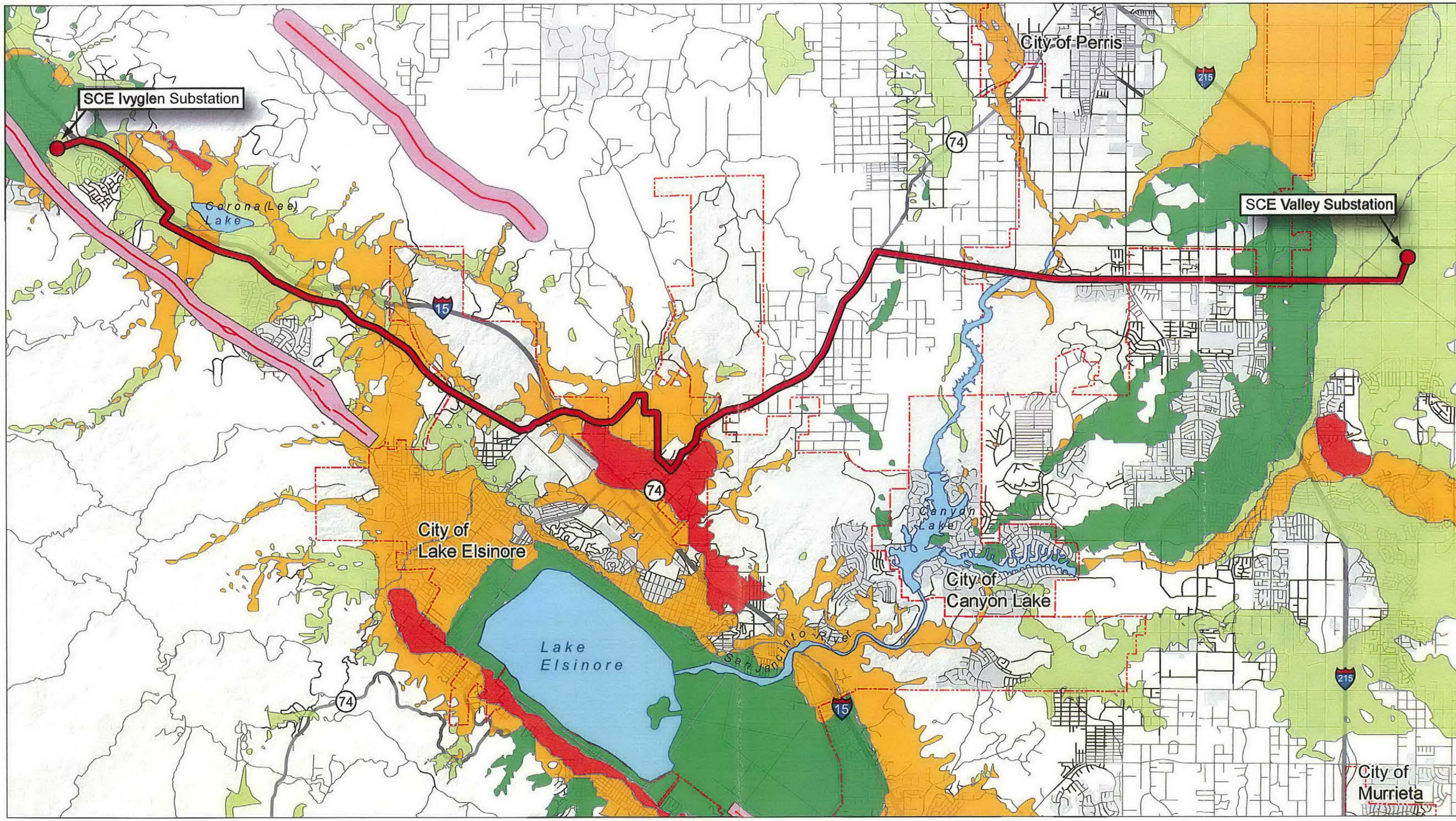
- Segment C-4 (western half)
- Segment C-6 (east of I-15)

4.7.2 REGULATIONS, PLANS AND STANDARDS

Federal

There are no federal regulations applicable to the project related to geology, soils, and seismic hazards.

Figure 4.7-5: Fault Hazard and Geologic Hazard Zones



SOURCE: Earth Consultants International 2000, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

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State

Alquist-Priolo Earthquake Fault Zoning Act

The 1972 Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act) provided for the delineations of rupture zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture and to prohibit the location of structures for human occupancy across the traces. Cities and counties must regulate certain development projects within the zones, which may include withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement.

Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1991 was enacted to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. The Act mandates that the state geologist delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones.

California Building Code

The California Building Code (CBC) is a modified version of the Uniform Building Code published in the United States by the International Conference of Building Officials. Standards and text were amended to reflect California earthquake conditions. Oversight of the CBC is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating building standards.

Regional and Local

County of Riverside

The County of Riverside General Plan (Policy S2.1a3) requires geologic studies or analyses for critical structures including critical facilities, high-occupancy, schools, and high-risk structures, within 0.5 miles of all Quaternary to historic faults shown on the County's Earthquake Fault Studies Zones map. Critical facilities are parts of infrastructure that must remain operational after an earthquake, or facilities that pose unacceptable risks to public safety if severely damaged. In Riverside County, critical facilities include schools, hospitals, fire and police stations, emergency operation centers, communication centers, electrical infrastructure, dams, and industrial sites that use or store explosives, toxic materials, or petroleum products (County of Riverside 2003).

City of Lake Elsinore

The City of Lake Elsinore is currently writing a new General Plan. The current General Plan, Public Safety and Urban Services Element (City of Lake Elsinore 1990) recommends several policies be adopted to protect people and structures from geologic hazards.

City of Perris

The City of Perris' General Plan includes one applicable policy related to seismic hazards:

> **Policy I.E: Seismic Hazards:** All development will be required to include adequate protection from damage due to seismic incidents.

4.7.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; strong seismic shaking; seismic-related ground failure, including liquefaction; or landslides
- Result in substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

4.7.4 IMPACT ANALYSIS

Impact Summary

Soils and geologic effects associated with construction of the Proposed Project would be limited to erosion during construction activities and seismic hazards during operation. SCE's best management practices (BMPs) would be implemented to minimize soil erosion for all construction components. Seismic hazards are reduced or avoided in the design of the Subtransmission Line, substation improvements, and telecommunications line. The project construction and operation would not result in significant impacts related to soils and geology.

Construction Impacts

Erosion

Subtransmission Line. The Proposed Subtransmission Line Route would traverse maximum slopes of approximately four to eight percent. BMPs would be used to minimize erosion and direct runoff that could flow from the pole construction pads to natural drainages. The construction of poles requires some grading to create the pole pad and to expand the access road system to the poles. Grading results in soil disturbance and loss of vegetation that would in turn promote short-term increases in erosion.

BMPs, including erosion control measures, would be included as part of the Construction Storm Water Pollution Prevention Plan (SWPPP). The SWPPP would be implemented during construction to minimize erosion and sedimentation during grading. Use of existing roads for access would be maximized. Roads would follow natural hillside contours and avoid steep slopes when possible. New service roads would be compacted and gravel would be used in areas where soils may be susceptible to erosion.

Erosion would be less than significant because of the short duration of construction (12 to 18 months), the limited areas that would be graded at one time, and the use of standard BMPs to minimize runoff and dust erosion (see dust control measures in Section 4.4, Air Quality). Detailed engineering would address erosion and sediment control measures during construction to further reduce impacts related to erosion.

Substations. Erosion effects associated with improvements at both substations would be very limited and contained within the existing substation boundaries. Substation improvements at both Valley and Ivyglen substations would occur on level ground that has been previously developed and prepared for further construction. The ground has been compacted and all vegetation removed. SCE's proposed erosion control measures presented in Sections 4.2, Air Quality and 4.8, Hydrology and Water Quality, would further reduce the potential for erosion at the site, thus ensuring wind and water erosion impacts would be less than significant.

Telecommunications Line. Proposed telecommunications line construction could locally increase erosion potential. Short portions of the telecommunications line would be installed underground by using a backhoe. The trenches would be 18 inches wide and 36 inched deep. SCE would use standard practices (such as watering), described in this section and in Sections 4.2, Air Quality, and 4.8, Hydrology and Water Quality, to reduce dust emissions during construction.

Equipment used to install the telecommunication line would follow existing roads and new roads created for construction of the Subtransmission Line. Therefore, construction traffic would not change drainage patterns or increase erosion potential. BMPs and SCE Proposed Measures would be implemented to control erosion and no significant erosion impacts would result.

Operational Impacts

Expansive Soils and Hydrocompaction

Geotechnical studies would be conducted prior to construction. The studies would evaluate the presence and extent of expansive or collapsible soil for all aspects of the Proposed Project. Standard design practices are available and would be used to mitigate hazardous soil conditions, if encountered. Standard practices require soil at pole and substation sites to be compacted. Other standard design practices are available to address unstable soil conditions if needed. No adverse soils impacts are anticipated within the Proposed Subtransmission Line Route or telecommunications line route or at either substation where improvements are proposed.

Subsidence

Significant subsidence has not been documented in the Project Study Area. The potential hazard from subsidence along the Proposed Subtransmission Line Route or telecommunications line route would be reviewed during detailed engineering and design. Standard design features would be incorporated into the design of the Proposed Project and are included as SCE Proposed Measures to avoid impacts related to subsidence.

Ground Rupture

Subtransmission Line. Ground ruptures due to fault activity have the potential to cause significant strain on the Subtransmission Line poles. However, engineering standards would be applied to the design of the Subtransmission Line structures that would adequately mitigate the risk of ground rupture. Subtransmission poles would also be located outside of known ground rupture zones.

Substations. The Valley Substation is not located in an area at risk of ground rupture. The Ivyglen Substation is located in an area at risk of ground rupture. Substation improvements would be constructed and designed based on criteria similar or superior to those presented by the Institute of Electrical and Electronics Engineers provisions outlined in its "Recommended Practices for

Seismic Design of Substations." The new equipment would not require daily personnel be present on site and risks from ground rupture as a result of the upgrades would be less than significant.

Telecommunications Line. Portions of telecommunications line would be installed in underground conduit and portions would be attached to the Proposed Subtransmission Line poles. The underground portion of the line would have limited risk of effects from seismic activity because it would be designed in accordance with standard building codes and seismic standards for utilities. The line would traverse the documented Alquist-Priolo Hazard Zone for the Ivyglen Fault immediately after leaving the Ivyglen Substation on overhead lines. Since the telecommunications line associated with this project is the second line of a redundant system, potential surface rupture hazards are less than significant.

Ground Shaking

Subtransmission Line. The Proposed Subtransmission Line Route is located in a region of several active seismic fault zones. Strong ground shaking is likely during the operational lifetime of the Subtransmission Line. Engineering, design, and the geotechnical studies would identify the hazard levels in the area and SCE design engineers would follow the geotechnical recommendations and seismic building guidelines to withstand seismic ground shaking.

Substations. The Valley Substation is not located within an active fault zone. SCE would design equipment to withstand strong ground shaking and moderate deformation. Ground shaking would not present a significant risk. Severe ground shaking also has the potential to cause human injury. The substation is staffed, and periodic maintenance or emergency repairs would be conducted by existing SCE personnel. Potential effects to workers from seismic shaking would be less than significant because the substation has been designed to minimize damage caused by seismic ground shaking.

The Ivyglen Substation is located in proximity to several active seismic fault zones of the Elsinore Fault. During the operational lifetime of the substation improvements it is likely that moderate to strong ground shaking could occur in the Project Study Area. Design studies would identify the relative hazard levels in the area and SCE design engineers would follow building code recommendations to support appropriate seismic designs of equipment that would be susceptible to seismic ground shaking.

Substation equipment would be engineered and constructed to minimize damage caused by strong ground shaking and moderate deformation. Severe ground shaking also has the potential to cause human injury. The substation would be unattended and SCE personnel would only visit for periodic maintenance or emergency repairs. Potential effects to workers from seismic shaking would be less than significant.

Telecommunications Line. The telecommunications line attached to the Proposed Subtransmission Line poles would be subject to ground shaking. The poles would be constructed to seismic standards and are expected to withstand most ground shaking in the area (see discussion above under Subtransmission Line).

Portions of the telecommunications line installed in underground conduits would comply with the California Building Code for underground construction and designed to withstand ground shaking. Effects from ground shaking on the telecommunications line would be less than significant.

Liquefaction

Subtransmission Line. Portions of all Subtransmission Line segments, except Segments E-1 and W-8, would traverse areas delineated as moderate to high liquefaction hazard zones (Earth Consultants International 2000). Portions of C-1, C-3, C-4, and C-6 would be placed in areas delineated as high liquefaction hazard. Segments E-1 and W-8 pass through areas of very low or low liquefaction hazard. Liquefaction hazards are addressed with appropriate foundation designs, including excavation, grading, and compaction as part of the technical design and engineering of the subtransmission line. The design would include identification of liquefaction areas and would apply the appropriate engineering standards to ensure the integrity of the poles and lines. Impacts related to liquefaction would be less than significant.

Substations. Both substations are located in an area delineated by SCE data as low risk of liquefaction in the event of seismic shaking. Liquefaction potential was evaluated during site-specific design level studies prior to construction and possible liquefaction hazards were addressed with appropriate foundation designs, including excavation, grading, and compaction. Therefore, potential liquefaction impacts to the substations would be less than significant.

Telecommunications Line. Telecommunications lines would pass through areas with potential for liquefaction hazards. The lines placed underground would not be at risk in the event of soil liquefaction. They would be placed in conduits designed to withstand seismic events and stresses. The remainder of the line would be installed on the poles erected for the Proposed Subtransmission Line that would be designed to seismic standards and are expected to withstand any liquefaction. Therefore, potential liquefaction impacts would be less than significant.

Landslide

Subtransmission Line. Landslide hazards are addressed with appropriate foundation designs, including excavation, grading, and compaction as part of the technical design and engineering of the Subtransmission Line. The design would include identification of landslide hazard areas and would apply the appropriate engineering standards to ensure the integrity of the poles and lines. The risk associated with landslides would not be significant.

Substations. The Valley and Ivyglen substations are located on level ground and would not be at risk from landslides. There would be no impacts related to landslides as a result of substation improvement.

Telecommunications Line. Portions of the telecommunication line would be placed in duct banks designed to withstand seismic events and stresses. The majority of the line would be attached to poles erected for the Proposed Subtransmission Line that would be designed to withstand seismic hazards, including landslides. The risk associated with the proposed telecommunications line due to landslides would not be significant

4.7.5 SCE PROPOSED MEASURES

The following are SCE Proposed Measures to further reduce the less-than-significant impacts related to geological resources:

> **GEO-SCE-1:** SCE seismic design specifications for the improvements at the substations would be based on criteria presented by the Institute of Electrical and Electronics Engineers provisions set forth in its "Recommended Practices for Seismic Design of Substations."
>
> **GEO-SCE-2:** Prior to final design of substation equipment foundations, and Subtransmission Line placement, a geotechnical study would be performed to identify site-specific geologic conditions in enough detail to support final engineering. Recommendations from the geotechnical study would be incorporated into the final project design.
>
> **GEO-SCE-3:** Subtransmission Line, substation improvements, and telecommunications line construction activities would be performed in accordance

with the soil erosion and water quality protection measures specified in the Construction SWPPP.

4.7.6 MITIGATION MEASURES

Impacts associated with geology and soils would be less than significant, and therefore, no mitigation is required.

4.7.7 ALTERNATIVES

The impact comparison Table 4.7-3 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.7-3: Geologic Resource Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Route is similar in geologic features to the Proposed Subtransmission Line Route with slightly more land considered at risk of liquefaction	Same as Proposed Subtransmission Line Route during construction, possible increased risk of liquefaction hazard during operation	Greater Impact	Same as Proposed Route
C-2	Route is similar in geologic features to the Proposed Subtransmission Line Route with slightly less land considered at risk of liquefaction	Same as Proposed Subtransmission Line Route during construction, possible decreased risk of liquefaction hazard during operation, BMPs, design, and SCE Proposed Measures would avoid significant impacts	Less Impact	Same as Proposed Route
C-7	Route is similar in geologic features to the Proposed Subtransmission Line Route with slightly more land considered at risk of liquefaction	Same as Proposed Subtransmission Line Route during construction.	Equal Impact	Same as Proposed Route
W-2	Route is similar in geologic features to the Proposed Subtransmission Line Route with slightly more of the proposed route lands susceptible to landslide	Same as Proposed Subtransmission Line Route during construction, possible increased risk of landslide hazard during operation, BMPs, design, and SCE Proposed Measures would avoid significant impact	Greater Impact	Same as Proposed Route
W-3	No significant change	Same as Proposed Subtransmission Line Route	Equal Impact	Same as Proposed Route
W-5	No significant change	No additional impacts	Equal Impact	Same as Proposed Route

4.7.8 REFERENCES

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4.8 Hazards and Hazardous Materials

4.8.1 ENVIRONMENTAL SETTING

Riverside County developed a Safety Element as part of the County of Riverside General Plan (2003) to reduce death, injuries, property damage, and economic and social impacts from hazards. Hazardous materials, including agricultural chemicals, natural gas and petroleum, explosives, radioactive materials, and various commercial chemical substances, are used, stored, or produced in Riverside County. There are underground pipelines within the County, carrying natural gas, crude oil, and other petroleum products.

Other potential hazards include flooding, hazards relating to airports, emergency response, fire, and electrical shock. Another hazard is from contact with underground gas lines when trenching or boring. The Proposed Subtransmission Line and telecommunications line crosses an existing natural gas pipeline in five locations. There are two crossing locations on each of Segments W-1 and W-10, and one crossing of Segment W-4. The natural gas pipeline and the Proposed Subtransmission Line and telecommunications line routes are shown on Figure 4.8-1, with details of the two substation locations shown on Figures 4.8-2 and 4.8-3. New telecommunications equipment would be installed within both the Valley and Ivyglen substations to facilitate new interconnections.

Hazardous Materials

Hazardous materials are chemical and non-chemical substances, which if released or misused, can pose a threat to the environment or human health. Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazardous materials are used in industry, agriculture, medicine, research, and consumer goods. Many products containing hazardous chemicals are routinely used and stored in homes. Hazardous materials can be in the form of explosives, flammable and combustible substances, poisons, radioactive materials, pesticides, and petroleum products. These substances are most often released as a result of motor vehicle or equipment accidents, or because of chemical accidents during industrial use. These substances have the potential to leach into soils, surface water, and groundwater due to spills, if not properly contained.

Airports and Airstrips

Perris Valley Airport is a privately-owned, public-use airport located near the corner of Ethanac Road and Goetz Road in Perris. This facility provides a 5,100-foot long runway, and handles approximately 68 aircraft operations per day. The airport serves as home to ultralight plane rides and the Perris Valley Skydiving Company (City of Perris 2004). It is located approximately 1.1 mile north of the Proposed Subtransmission Line Route.

Skylark Airport is located within the City of Lake Elsinore, in the vicinity of the southern terminus of Lake Elsinore. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface of Skylark Airport consists of gravel and sand. As such, this surface generally does not permit optimal conditions for frequent and convenient airport operations (City of Lake Elsinore 2006). Skylark Airport is located 4.9 miles from the Proposed Subtransmission Line Route.

Emergency Response

Emergency response time is defined as the speed at which fire, police, and ambulance service effectively reacts to an emergency or emergency call. Law enforcement for the Project Study Area is provided primarily through the Riverside County Sheriff's Department. The cities of Perris and Lake Elsinore contract with the County Sheriff's Department for municipal police services. The

California Highway Patrol, with additional support from the Sheriff's Department, provides traffic enforcement for Riverside County in the Project Study Area.

The Riverside County Fire Department contracts with the California Department of Forestry and Fire Protection (CDF) to provide fire protection services to the entire Project Study Area, including unincorporated Riverside County. Additional discussion of emergency services is included in Section 4.14, Public Services.

Fire Potential

Fire hazards are typically exacerbated by specific environmental conditions, such as dry climates or high winds. Fire hazards can also be the result of human activities, including use of petroleum fuels and products, and the combustion of natural gas and wood for heating. Wildfires in the Project Study Area are a threat year-round. Wildfires are a threat due to dry vegetation and grasslands, which are prone to catch fire from natural phenomenon (lightning strikes), as well as human sources (cigarette smoking, equipment use, and electric fires) (City of Lake Elsinore 2006).

Much of Riverside County is identified as a potential wildland fire area by the CDF, and in the County of Riverside General Plan Safety Element. A large portion of the County is undeveloped and consists of rugged terrain with highly flammable indigenous vegetation. In particular, the hillside landscape of Riverside County has a substantial fire risk. Fire potential for the County is typically greatest during the months of August, September, and October when dry vegetation coexists with hot, dry, Santa Ana winds.

The potential for brushfire exists at any time of the year. The entire Project Study Area is within a high fire potential area.

4.8.2 REGULATIONS, PLANS, AND STANDARDS

Federal

US Environmental Protection Agency

The US Environmental Protection Agency (US EPA) oversees the Clean Water Act through the local Regional Water Quality Control Boards, Air Districts, and the Department of Toxic Substances Control (DTSC). The Act also requires the US EPA to oversee each state's water quality standards decisions and public involvement processes. The US EPA must step in if state standards do not meet minimum requirements (US EPA 2006). The US EPA remains the lead on sites that are included on the National Priority List (NPL). The Federal Clean Water Act (Section 402(p)(2B)) sets standards for construction storm water discharges. Implementation of the Clean Water Act is the responsibility of each state.

Resource Conservation and Recovery Act

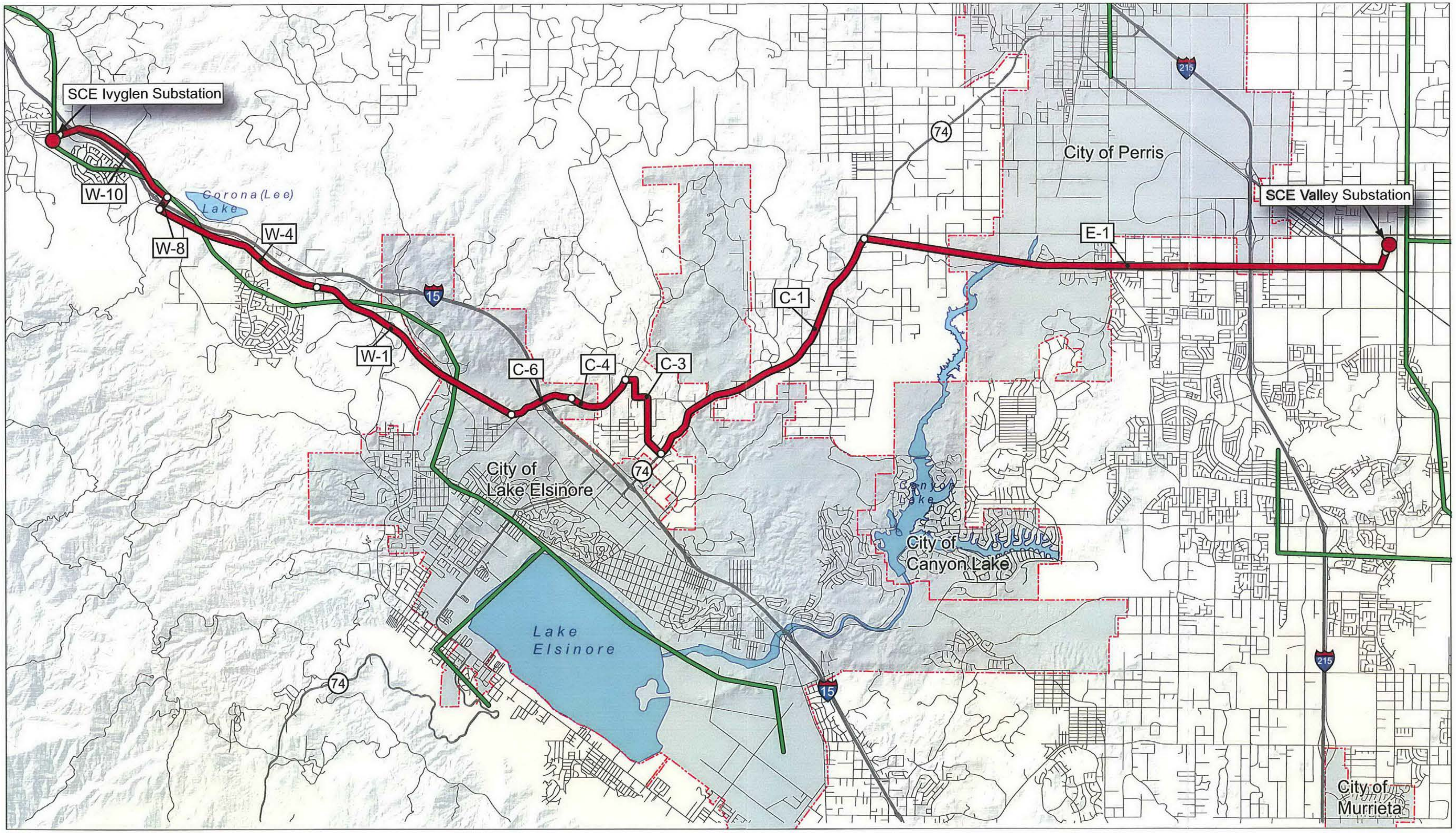
The Resource Conservation and Recovery Act (RCRA) regulates hazardous waste from the time that waste is generated through its management, storage, transport, and treatment, until its final disposal. The US EPA has authorized the DTSC to administer the RCRA program in California.

State

California Occupational Safety and Health Administration

California law defines a hazardous material as any material that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a present or potential hazard to human health and safety or to the environment if released in the workplace or the environment (California Health and Safety Code Section 25501). A hazardous waste is defined as

Figure 4.8-1: Proposed Route and Natural Gas Pipeline



SOURCE: PennWell MAPSearch 2006, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route Segment
- Interstate Highway
- State Route
- Natural Gas Pipeline
- Road
- Substation
- City Area
- Water

N W E S

0 0.5 1 2 3 4 Miles

MHA ENVIRONMENTAL CONSULTING, INC.

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

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Figure 4.8-2: Proposed and Alternative Routes and Natural Gas Pipeline (West)

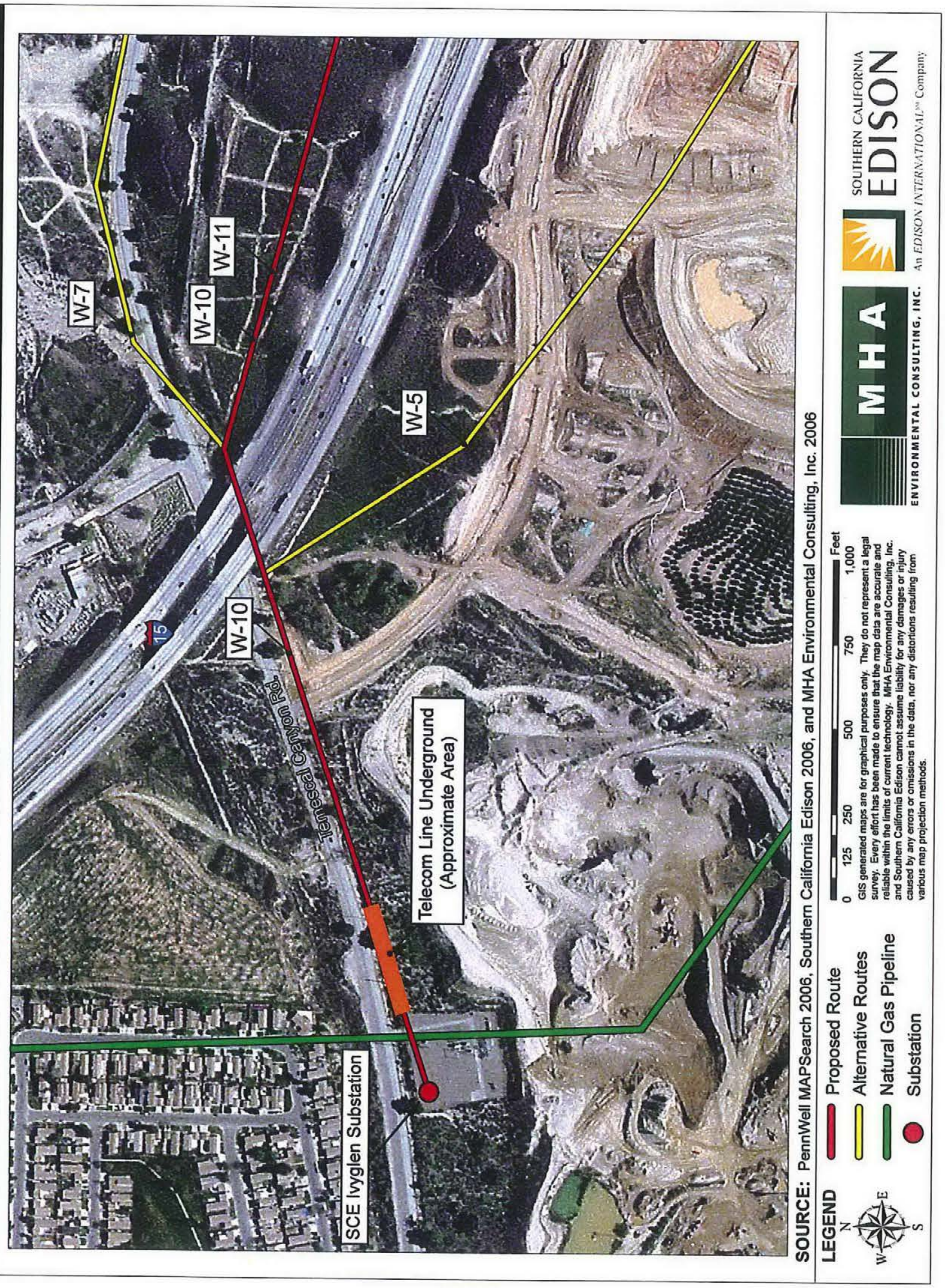
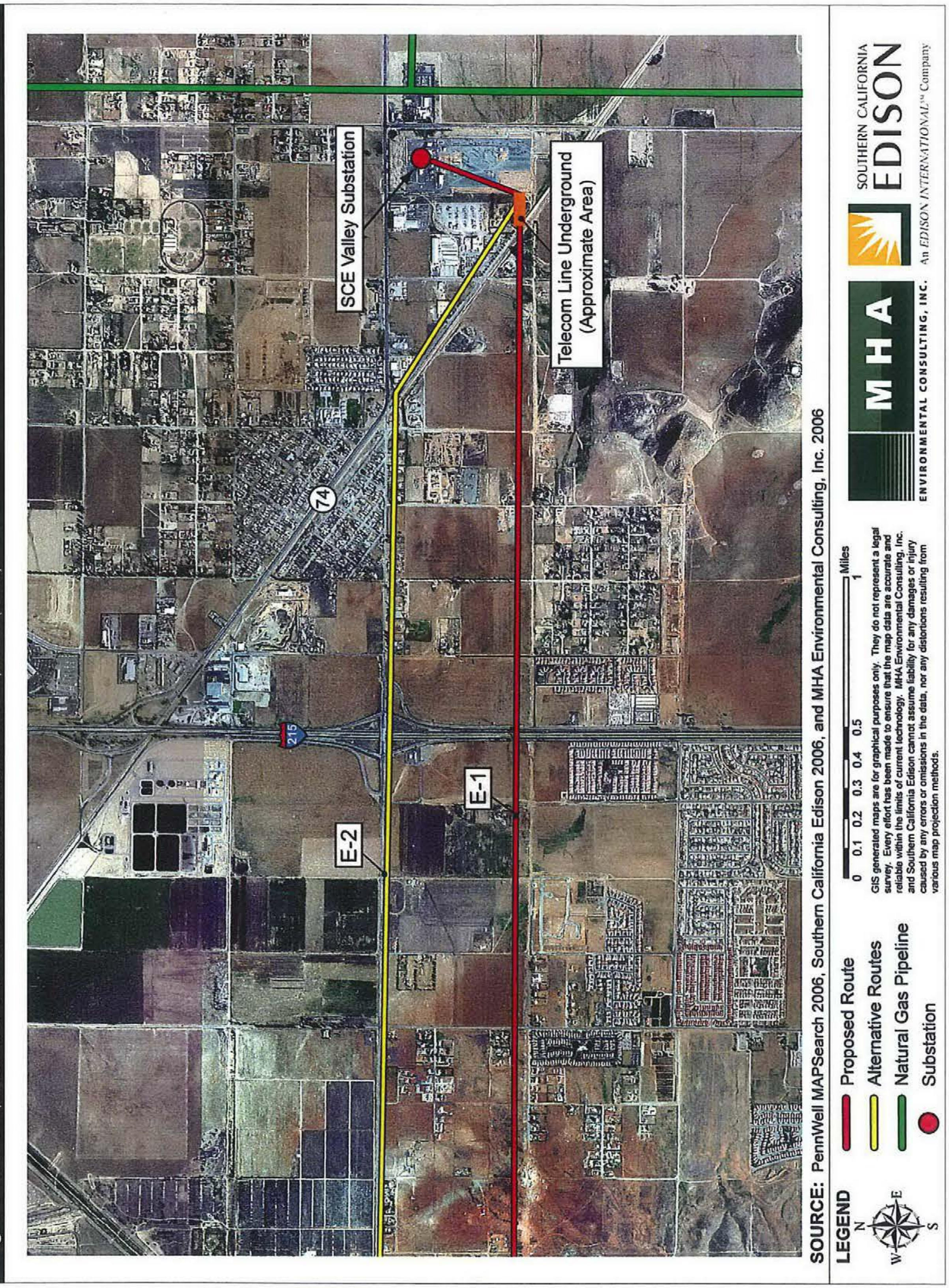


Figure 4.8-3: Proposed and Alternative Routes and Natural Gas Pipeline (East)



a discarded material of any form (e.g., solid, liquid, gas) that may pose a present or potential hazard to human health and safety or to the environment when improperly treated, stored, transported, or disposed of, or otherwise managed (California Health and Safety Code Section 25117).

California's RCRA hazardous waste program is more stringent than the federal program and certain wastes that would not qualify as hazardous based on federal standards may still qualify as hazardous waste according to California standards (termed non-RCRA hazardous waste). Handling and storage of fuels, flammable materials, and common construction-related hazardous materials are governed by California Occupational Safety and Health Administration (Cal/OSHA) standards for storage and fire protection.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) General Order (GO) 95 specifies required clearances, grounding techniques, maintenance, and inspection requirements for electrical transmission and substation projects.

California Code of Regulations

State laws and regulations are codified in the California Code of Regulations (CCR). CCR provisions relevant to the Proposed Project include the following:

- *8 CCR 2700 et seq. High Voltage Electrical Safety Orders.* Establishes essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger
- *14 CCR 1250-1258, Fire Prevention Standards for Electric Utilities.* Provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and specifies when and where standards apply

Local

County of Riverside

There are no County regulations related to hazards and hazardous materials that are applicable to the Proposed Project.

City of Lake Elsinore

Community Wildfire Protection Plans (CWPP) are authorized and defined in the Healthy Forests Restoration Act (HFRA) (City of Lake Elsinore 2006). The HFRA places emphasis on community planning by extending a variety of benefits to communities with a wildfire protection plan. Critical among these benefits is the option of establishing a localized definition and boundary for the wildland-urban interface and the opportunity to help shape fuels treatment priorities. The Lake Elsinore General Plan Update recommends the City adopt a CWPP.

City of Perris

The Safety Element of the City of Perris General Plan (City of Perris 2005) outlines the City's goals for reducing the potential risks for death, injuries, property damage, and economic and social dislocation resulting from hazards or catastrophic events. The Safety Element also addresses issues related to man-made hazards, such as hazardous water users and the level of emergency services accessible by residents of the City of Perris.

4.8.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- Result in a safety hazard for people residing or working in the Project Study Area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport
- Result in a safety hazard for people residing or working in the Project Study Area for a project within the vicinity of a private airstrip
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands

4.8.4 IMPACT ANALYSIS

Impact Summary

Hazardous materials and potential hazards associated with the construction, operation, and maintenance of the Proposed Project would be limited to less than significant risk by proper management, disposal, and other precautionary measures. Impacts of the Proposed Project would not cause significant environmental or health and safety impacts.

Construction Impacts

Hazardous Materials

Subtransmission Line. Hazardous materials that would be used during construction of the Proposed Subtransmission Line would include gasoline, diesel fuel, oils, solvents, and lubricants from construction vehicles. There are no feasible alternatives to these materials for operation of construction vehicles and equipment. The hazards associated with excavating holes for the placement of poles for the Proposed Subtransmission Line include accidental contact with existing underground gas lines. This hazard could be avoided by identifying the precise locations of all underground facilities prior to boring holes. The Proposed Subtransmission Line Route crosses the existing natural gas pipeline at five locations. These locations include two each at Segments W-1, and Segment W-10, and one at Segment W-4. Project plans and specifications should show gas pipelines and utilities, and construction would be conducted according to best management practices (BMPs). SCE would contact the Underground Service Alert of Southern California (DigAlert 2006) prior to the start of construction to identify the location of gas pipelines within the

Project Study Area. SCE would manage this potential hazard through appropriate engineering design and adherence to relevant codes and regulations. No potentially significant impacts would occur from construction of the Proposed Subtransmission Line.

The Proposed Subtransmission Line Route is not located near, and the Proposed Route segments are not included on, US EPA's National Priorities List (NPL) of hazardous materials sites. The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories (US EPA 2006). There would be no significant impacts related to NPLs.

Substations. Hazardous materials that would be used during improvements of the substations would include gasoline, diesel fuel, oil, solvents, and lubricants. There are no feasible alternatives to these materials for operation of construction vehicles and equipment.

The potential for environmental effects from using fuels and equipment related hazardous materials would be minimal because of the small volume and low toxicity of these materials. The most likely effects of using these materials would be potential spills and drips of gasoline, diesel fuel, oil, hydraulic fluid, and lubricants from vehicles or other machinery. There would also be a potential for release of paints, solvents, adhesives, or cleaning chemicals during construction. SCE would manage this potential hazard with the implementation of their Storm Water Pollution Prevention Plan (SWPPP).

Application of SWPPP measures would avoid or minimize any significant hazard effects. All construction would be performed in accordance with SCE's SWPPP to minimize the risk of an accidental spill or release of hazardous materials. No significant impacts from exposure to hazardous materials would occur from improving the substations.

Telecommunications Line. Impacts of construction of the telecommunications line would be similar to those identified for the Proposed Subtransmission Line, except that they would occur over a shorter time period with fewer personnel and equipment.

The potential for hazards associated with installing underground fiber optic cables along the Proposed Subtransmission Line route would be from accidental contact with existing underground gas lines. This hazard can be avoided by identifying the precise locations of all underground facilities prior to trenching for the underground telecommunications line. There would be two underground sections of the proposed telecommunications line. There would be one underground section in Segment E-1 and W-10 (Figure 2.4-2 and Figure 2.4-7). The underground within Segment E-1 is located 0.33 miles west of the natural gas line, and where Segment W-10 crosses over the natural gas line along Temescal Road into the Ivyglen Substation.

To decrease the hazard of coming into contact with the underground gas line, project plans and specifications would show all gas pipelines and utilities. Construction would be conducted according to BMPs to avoid potential impacts associated with accidental contact with the buried natural gas pipeline. As stated in the Subtransmission Line discussion above, SCE would contact the Underground Service Alert of Southern California (DigAlert 2006) prior to the start of construction to identify the location of the gas lines within the Project Study Area. There would be no significant impacts related to telecommunications line construction.

Airports and Airstrips

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line, improvements of the two substations, and the proposed telecommunications line would not result in a safety hazard for people residing or working in the Project Study Area. The Proposed Subtransmission Line Route is approximately 1.1 miles from the Perris Valley Airport, a private airport used exclusively for recreation. The Proposed

Subtransmission Line would be located within the existing SCE ROW, on the north side of the existing Valley-Serrano 500 kV transmission line. The Proposed Subtransmission Line would be parallel to the airport runway and construction activities would not interfere with airport operations.

Personal communication with Rob Caster, Chief Pilot at Perris Valley Airport, confirmed that the construction and operation of the Proposed Project (or the alternative segments) would not have a significant impact on the Perris Valley Airport (Caster 2006). The location of the Proposed Subtransmission Line Route would not interfere with or be subject to safety hazards related to the airport.

The Lake Elsinore Skylark Airport is located 4.9 miles from the Proposed Route. There would be no impact related to this airport.

Emergency Response

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line and telecommunications line could potentially interfere with emergency response by ambulance, fire, paramedic, and police vehicles at locations where Subtransmission Line stringing activities would occur over I-215 and I-15, and the local roads identified in Table 4.16-2. The temporary road and lane closures associated with construction activities could lengthen response times required for emergency vehicles passing through the construction zone. SCE would accommodate the emergency service provider vehicle by immediately stopping work to allow the passage of emergency vehicles with minimal delay. Impacts would be less than significant.

Construction materials and supplies would be delivered to the construction sites by vendors who would implement a Traffic Management Plan to avoid blocking emergency or other accesses. There would be no impact to the availability of emergency access.

SCE would obtain an encroachment permit or similar authorization from the applicable agency with jurisdiction at locations where the construction activities would occur within or above the public road ROW. The encroachment permit would be obtained prior to conducting work within or above a ROW. The specific requirements of the applicable transportation agency may require traffic safety measures at encroachment locations, including detouring all traffic off the roadway at the construction location or implementation of a controlled continuous traffic break while stringing operations are performed. Encroachment permits would also restrict road closures to off-peak periods to avoid excessive traffic congestion, where necessary. The specific agency requirements would be included as stipulations in the required encroachment permits. Compliance with the encroachment permit conditions (such as those measures described above) would ensure that potential impacts associated with short-term road closures are less than significant.

Construction of the Proposed Subtransmission Line and telecommunications line would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Emergency response time is defined as the speed at which fire, police, and ambulance service effectively reacts to an emergency or emergency call. The Traffic Management Plan would include measures to ensure access would not be blocked, resulting in no impact.

Substations. Construction of the proposed substation improvements would not interfere with emergency response by ambulance, fire, paramedic, and police vehicles inasmuch as all substation improvements would occur on the existing substation sites.

Fire Hazards

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line and telecommunications line could present a fire risk. Grasslands within and adjacent to the Proposed Subtransmission Line Route are prone to wildfires and could be ignited if proper fire prevention measures are not implemented. Fire risk during project construction could result from refueling, operating vehicles, and cigarette smoking. SCE would utilize existing cleared areas to avoid increased risk of fire from parked vehicles, staging areas, and stationary engine sites. Fire risks would be minimized because the sites would be graded and clear of vegetation and flammable materials. Fire risk could include ignitable material (packaging, etc.) that could be on site. These areas would be posted with a sign identifying the area as a "No Smoking" area.

Construction of the Proposed Subtransmission Line and telecommunications line would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. These impacts would be avoided by implementing SCE standard fire prevention and response procedures. SCE implements standard fire prevention and response procedures to reduce the risk, and in the event a fire occurs, provide for immediate suppression and notification. The risk of fire during construction would be minimized, and potential impacts would be less than significant with implementation of SCE's fire prevention protocols.

Substations. Substation improvements could present a fire risk. The existing adjacent grasslands are prone to wildfires and could be ignited if proper fire prevention measures are not implemented. Fire risk during construction could result from refueling, operating vehicles, and cigarette smoking. The risk of fire from substation improvements would be low because the work would take place within the boundary of the two substations. The impact from fire would be minimized to a less than significant level through the implementation of SCE fire prevention protocols.

Operational Impacts

Hazardous Materials

Subtransmission Line and Telecommunications Line. Operation and maintenance of the Proposed Subtransmission Line and telecommunications line would not require the routine transport, use, or disposal of hazardous materials. Annual visual inspection of the line, and maintenance when necessary, would require the use of motor vehicles, which could present a very limited potential for the accidental release of hazardous materials. However, the relative risk of accidental release is so remote due to the frequency of inspections and anticipated repairs to be considered less than significant.

Substations. The proposed substation improvements would not introduce new hazardous materials to the area. SCE would continue to provide containment and/or diversionary structures or equipment to prevent discharge of an oil spill as described in the Spill Control Countermeasure (SPCC) requirements (40 VFR 112.1 Part 112.7). A SPCC plan would be prepared by SCE upon finalization of the substation improvement designs and submitted to Riverside County for review. No significant impacts are expected from hazardous materials or unforeseen accidents with implementation of the SPCC and SCE standard protection measures for operation of the substations after the proposed improvements.

Fire Hazards

Subtransmission Line. The Proposed Subtransmission Line may pose a fire hazard if a conducting object contacts a line. To avoid risk, SCE would maintain an area of cleared brush around the line after construction in accordance with applicable State and Federal laws and in accordance with SCE protocol for minimizing the risk of fire. The impact would be less than significant.

Substations. Substation improvements would not expose personnel to significant fire hazard. Areas adjacent to the substation structures are considered areas of high fire risk during dry months because of the existing vegetation. SCE would minimize the risk of fire by clearing vegetation and maintaining clearance throughout the operation of the substation. The impacts related to substation operation would be less than significant.

Telecommunications Line. Operational impacts associated with the telecommunications line would be limited to impacts related to periodic maintenance of the above-ground line. The telecommunications line would require little, if any, maintenance during its lifetime. There would be no significant impacts related to telecommunication line maintenance.

Airports and Airstrips

Subtransmission Line and Telecommunications Line. The Proposed Subtransmission Line would be located approximately 1.1 miles of the Perris Valley Airport. The project structures would not have an impact on the approach-departure surfaces of the runway because of the distance between the Subtransmission Line and the airport. The Proposed Subtransmission Line would be approximately 65 feet high at a distance of approximately 1.1 miles south of the airport runway, and thus would not require filing a notice with the Federal Aviation Administration. The location of the airport would not significantly impact the Proposed Subtransmission Line. There would be no impacts related to conflict with airport use.

Substations. Neither the Valley nor Ivyglen substations are located near an airport or airstrip. Risk of air traffic hazards during operation would not be significant.

Telecommunications Line. The telecommunications line (both on subtransmission line poles and underground) would not cause a safety hazard related to an airport or airstrip. There would be no significant impacts related to safety hazards.

Emergency Response

Subtransmission Line and Telecommunications Line. Operation and maintenance of the Proposed Subtransmission Line and telecommunications line would not block roads or impede emergency access in the area. Maintenance would be conducted in accordance with a Traffic Management Plan that defines standard measures (including standard measures such as flagging, working at night, hiring a traffic service) to ensure avoidance of conflicts with traffic and access. The operation and maintenance of the Proposed Subtransmission Line would therefore not impair or inhibit the operation or establishment of an emergency response or evacuation plan, resulting in no impact.

Substations. The proposed substation improvements would be located within the boundaries of the existing substations, which would not be regularly staffed. Operation and maintenance of the substations would occur away from roadways and would not affect existing roadways. The operation and maintenance of the substation improvements would have no impact on emergency response routes.

4.8.5 SCE PROPOSED MEASURES

SCE would implement the following standard measures to reduce potential impacts from hazards to less than significant levels.

> **HAZ-SCE-1:** SCE would prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) prior to initiating construction activities. The SWPPP would utilize BMPs to address the storage and handling of hazardous materials during construction activities.
>
> **HAZ-SCE-2:** SCE would implement standard fire prevention and response measures. The standards address spark arresters, smoking and fire rules, storage

and parking areas, use of gasoline-powered tools, road closures, use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Trained fire suppression personnel and fire suppression equipment would be established at key locations, and the personnel and equipment would be capable of responding to a fire within 15 minutes notification. Portable communication devices (i.e. radio or mobile telephones) would be available to construction personnel.

HAZ-SCE-3: SCE would maintain an area of cleared brush around construction areas in accordance with applicable State and Federal laws and in accordance with SCE protocol for minimizing the risk of fire. SCE would further minimize this risk by clearing all potential materials from the area, and maintaining clearance throughout the operation of the Proposed Project.

4.8.6 MITIGATION MEASURES

Impacts related to hazards or hazardous materials would be less than significant, and therefore, no mitigation is required.

4.8.7 ALTERNATIVES

The impact comparison Table 4.8-1 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.8-1: Hazards and Hazardous Materials Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/Mitigation Measures
E-2	Would decrease the distance between the Proposed Subtransmission Line and the Perris Valley Airport to 0.4 miles	Not significant	Equal Impact	If this alternate segment is chosen, SCE will notify the Perris Valley Airport of construction plans and comply with FAA regulations regarding construction, height of construction equipment, and permanent structures, including lights
C-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
C-7	Located on the east side of Highway 74, it would be 3.97 miles from the Perris Valley Airport	No additional impacts	Equal Impact	Sam as Proposed Route
W-2	Located on north side of I-15, which are primarily rural undeveloped lands	No additional impacts	Equal Impact	Same as Proposed Route

Table 4.8-1 *(Continued)*: Hazards and Hazardous Materials Impacts of the Alternative Route Segments				
Alternative Route	**Setting**	**Impact**	**Compared to Proposed Project**	**SCE Proposed Measures/Mitigation Measures**
W-3	Crosses I-15 on exiting 115 kV tubular steel poles (TSP) for 0.4 mile	No additional impacts	Equal Impact	Same as Proposed Route
W-5	Would cross just southeast of Glen Ivy and on the south side of I-15 from an existing SCE ROW, would cross an underground gas line at three locations, would cross a telecommunications line	No additional impacts	Equal Impact	Same as Proposed Route

4.8.8 REFERENCES

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4.9 Hydrology and Water Quality

4.9.1 ENVIRONMENTAL SETTING

Climate and Precipitation

Climatic conditions for Riverside County, including the cities of Lake Elsinore and Perris, are typical of inland areas of Southern California. The climate is dry, with an average annual precipitation at both cities of 10.7 inches. Record low and high rainfall is 5.3 inches and 21.4 inches, respectively. The area receives 85 percent of its annual rainfall from November through March. Light winter snow can occur in the area at higher elevations, but snow is uncommon (Western Regional Climate Center 2006).

Surface Water

Watersheds

The Proposed Project would be located in the Santa Ana River and San Jacinto Valley Watersheds. The eastern portion of the Proposed Subtransmission Line Route is located in the San Jacinto Valley watershed, which is considered by the Santa Ana Watershed Project Authority (SAWPA) to be a distinct watershed. The US EPA considers the San Jacinto Valley watershed as part of the Santa Ana River watershed (SAWPA 2006). The San Jacinto watershed is bounded on the south by the Santa Margarita watershed, on the east by the Salton Sea and Southern Mojave watersheds, and on the north/west by the Mojave and San Gabriel watersheds. Watersheds in the Project Study Area are shown on Figure 4.9-1.

The Santa Ana River watershed is an arid region. As a result, there is little natural perennial surface water in the watershed. Ephemeral streams in the Project Study Area are shown in Figure 4.9-2 below.

Surface waters originate from the upper portion of the watershed, primarily in the San Bernardino and San Gabriel Mountains. This upper zone of the watershed has the highest gradient. Soils and geologic units in this area do not allow subsurface percolation of surface water. Flows in the area consist mainly of snowmelt and stormwater runoff from the lightly developed San Bernardino National Forest. The surface runoff is generally high quality water at this point. The Santa Ana River is confined in its lateral movement in this zone, contained by the slope in the mountainous regions (SAWPA 2002).

The San Jacinto River drains the San Jacinto Valley and the western slopes of the San Jacinto Mountains. Much of the flow from the upper watershed basin infiltrates and recharges the groundwater. The remaining San Jacinto River flow cuts a course northwest through the Lakeview Mountains, eventually turning southwest across the Perris Valley and draining into Railroad Canyon Reservoir. Downstream of Canyon Dam, minimal base flows are common during drier periods. Heavy storms result in larger flows and possible overflows of Canyon Dam during and after the storms. The San Jacinto River flows out of the Railroad Canyon Reservoir southwest to Lake Elsinore. When water levels in Lake Elsinore reach 1,255 above mean sea level, the natural outflow for Lake Elsinore is Temescal Wash. Temescal Wash enters into the Santa Ana watershed and joins the Santa Ana River near Corona (EMWD 2005, SAWPA 2005).

Surface Waters in the Project Study Area

Overview of Surface Waters. Several surface water features are present near the Project Study Area. The surface waters include the San Jacinto River, Canyon River, Corona Lake (a reservoir on the Temescal Wash). Releases from the Railroad Canyon Reservoir flow to the San Jacinto

River, which flows into Lake Elsinore. This in turn flows into the Temescal Wash during the periods of high lake levels. A brief description of each of these hydrologic features is provided below.

Lake Elsinore. Lake Elsinore is a natural lake, approximately five miles long and two miles wide. The lake varies in size in response to varying hydraulic conditions ranging from 6,000 acres in very wet years to a dry lakebed in drought years. A levee was constructed across the lake in 1995 to reduce the water surface area and reduce evaporation. The San Jacinto River flows into Lake Elsinore via Railroad Canyon and Canyon Lake. Flow has been reduced over the last 100 years because of stream diversions and groundwater withdrawals in the tributary watershed. Lake Elsinore is approximately three miles south of the Proposed Subtransmission Line Route.

San Jacinto River. The San Jacinto River is located east of Lake Elsinore and is the largest tributary to Lake Elsinore. The river drains a 723-acre watershed. Headwaters of the river are located in the San Jacinto National Forest. The lower portion of the 765-mile watershed is in urban and agricultural land. The river flows northwest from the San Gabriel Mountains, just east of Perris, and then continues southwest through Railroad Canyon to Railroad Canyon Reservoir (also called Canyon Lake). The river eventually terminates at Lake Elsinore. The SCE Valley-Serrano 500 kV Transmission Line crosses the San Jacinto River approximately six miles west of the Valley Substation.

Canyon Lake was formed by damming the San Jacinto River. It is located approximately three miles upstream from Lake Elsinore. Surface water from Canyon Lake flows into Lake Elsinore through release, overflow, or seepage (SAWPA 2006).

Temescal Wash. Temescal Wash was historically an ephemeral stream. It was dry with little or no base flow during most of the year, except during and after storms. Water development in the basin diverted surface flows and lowered groundwater levels by seasonal pumping for irrigation and domestic supplies. Temescal Wash is located 3.8 miles southeast of Corona (MWH 2005).

Temescal Wash serves as the natural drainage course for outflow from Lake Elsinore, and the major drainage artery for the Temescal Valley. The wash flows 18 miles from Lake Elsinore northwestward to the Santa Ana River near Corona.

The Temescal Wash receives treated effluent from the Eastern Municipal Water District (MWD) recycled water system when effluent flows exceed recycled water demand and storage capacity in eastern MWD's service area. This flow is mostly during winter and does not contribute to base flows. As the area grows, the frequency of effluent discharge to Temescal Wash is expected to increase, eventually becoming year-round. (MWH 2005). An existing transmission Line crosses a riparian area associated with the Temescal Wash near Lake Street and Walker Canyon Road (Figure 4.9-2).

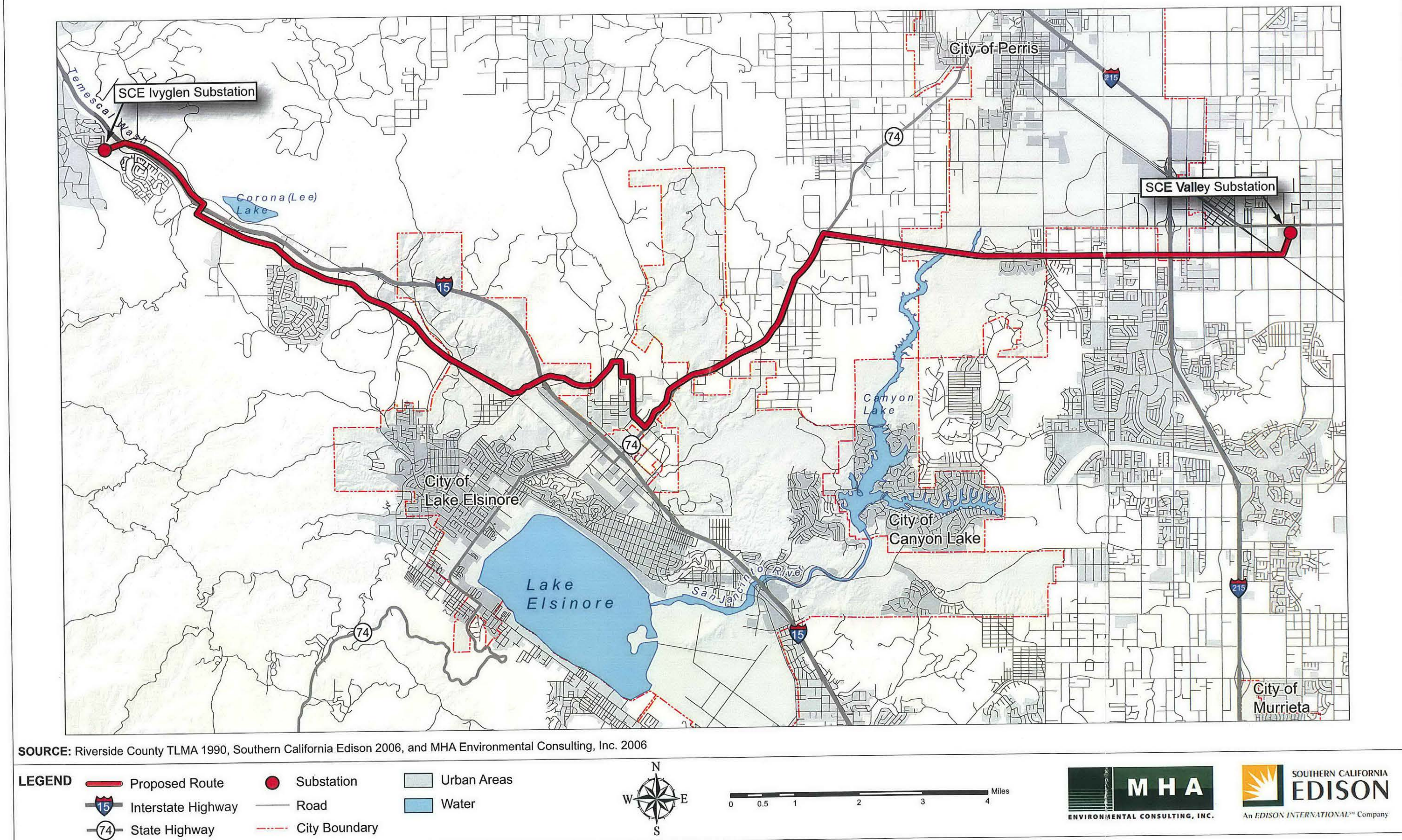
Corona Lake. Corona Lake is also known as Lee Lake. It is a 3,000 acre-foot man-made impoundment located on Temescal Wash. It is approximately 6.1 miles downstream from Nichols Road in the City of Lake Elsinore. The Lake was constructed by the Temescal Water Company (purchased by Elsinore Valley Municipal Water District (MWD)) for use as a source of agricultural and industrial water supply. Currently, the Lake is stocked with trout and used as a fishing recreation area. Corona Lake is approximately 1.9 miles southeast of the Ivyglen Substation.

Flooding Potential

Surface Flows

The Federal Emergency Management Agency (FEMA) is responsible for mapping the areas that are predicted to flood during 100-year and 500-year storm events. Flood hazard zones are identified by FEMA on Flood Insurance Rate Maps. The maps indicate the estimated level of

Figure 4.9-1: Surface Waters in the Project Study Area



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

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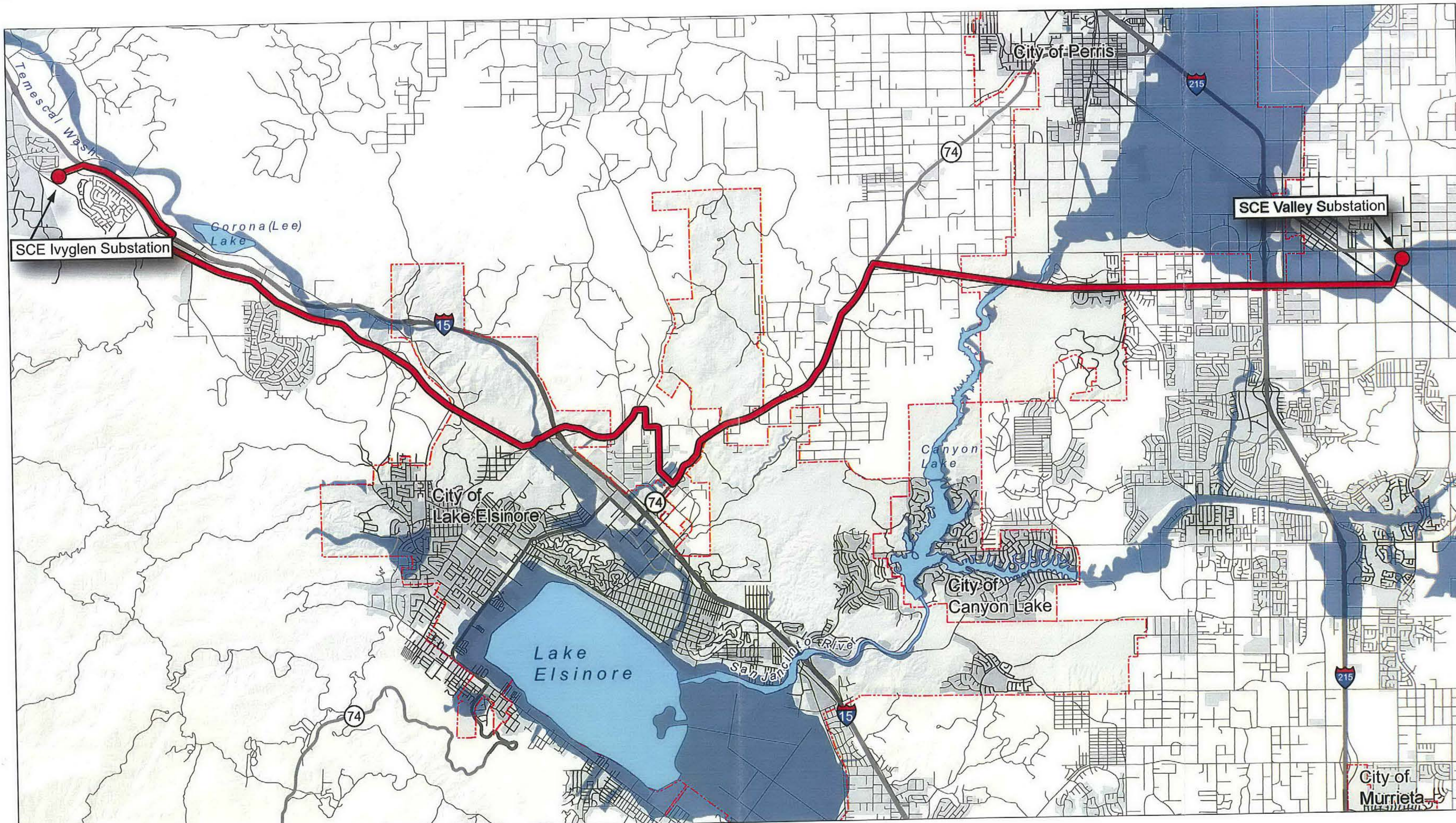
Figure 4.9-2: 100-Year Flood Hazard within the Project Study Area



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

LEGEND

- Proposed Route
- Interstate Highway
- State Route
- Substation
- Road
- City Boundary
- 100-Year Flood Hazard Zones
- Urban Area
- Water Body

N W E S

0 0.5 1 2 3 4 Miles

MHA ENVIRONMENTAL CONSULTING, INC.

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

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inundation under various conditions and intensities (Figure 4.9-3).

Riverside County Transportation and Land Management Authority maps (County of Riverside 1993) show the Proposed Subtransmission Line Route segments E-1, C-6, W-3, and W-6 would be located within areas of 100-year flood zones, with base flood elevations and flood hazards determined. The remainder of the Proposed Project would not be located within flood hazard zones. Regional flood control planning and facilities construction are within the jurisdiction of the Riverside County Flood Control District. The District is also responsible for maintenance and operation of flood control facilities including debris, dams, storm channels, and storm drains. Temescal Wash, San Jacinto River, and Lake Elsinore are considered significant flood hazards within the Project Study Area.

Dam Failure Inundation Areas

The Proposed Subtransmission Line Route, Valley Substation, and telecommunications line route would cross dam failure inundation areas (City of Perris 2004, City of Lake Elsinore 2006). Reservoirs in the Project Study Area include Railroad Canyon Reservoir and Corona Lake. As denoted in the General Plans for the City of Lake Elsinore and the City of Perris, the inundation areas for a dam break generally correspond to the 100-year floodplain boundaries.

Riverside County Transportation and Land Management Authority maps (1993) show Proposed Subtransmission Line Route segments E-1, C-6, W-3, and W-6 would be located within dam inundation areas. The remainder of the Proposed Project would not be located within dam inundation areas.

Regional flood control planning and facilities construction are within the jurisdiction of the Riverside County Flood Control District. The District is also responsible for maintenance and operation of flood control facilities including debris, dams, storm channels and storm drains.

Groundwater

Groundwater in the watershed is highly controlled by the geology of the area, including bedrock configuration and extensive faulting. Most groundwater basins are unconfined. However, variable depth to bedrock and presence of faults cause pressure zones where water flows towards (or to) the ground surface.

The Elsinore groundwater basin is supplied primarily by precipitation in the surrounding watershed. Other sources of inflow are infiltration along the San Jacinto River Channel upstream of Lake Elsinore, along with agricultural and residential return flows. The only major outflow of the groundwater basin is municipal pumping for potable water. A natural variation in groundwater depth underneath Lake Elsinore results in a steep groundwater gradient that flows northwest to southeast (City of Lake Elsinore 2006).

4.9.2 REGULATIONS, PLANS, AND STANDARDS

Federal

Clean Water Act

The Clean Water Act (CWA), as amended by the Water Quality Act of 1987, regulates water quality in the United States. The CWA defines regulations for the discharge of pollutants to waters of the United States from any point source. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. These waters include all navigable waters and tributaries thereto, and adjacent wetlands. In 1987, amendments to the CWA added section 402(p), which established a framework for regulating non-point source storm water discharges under the National Pollutant Discharge Elimination System (NPDES). The Regional Water Quality Control Boards (RWQCB) (see below) implements the NPDES storm water program.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designates the State Water Resources Control Board (SWRCB) as having jurisdiction over state water rights and water quality policy, and also establishes nine RWQCBs that oversee water quality at the local and regional level. The SWRCB and RWQCB have the responsibility of granting permits for certain point-source discharges, and for construction and storm water runoff.

The SWRCB and RWQCBs are responsible for developing and implementing regional basin plans to regulate all pollutants or nuisance discharges that may affect either surface water or groundwater. Basin plans are prepared by the RWQCBs to establish water quality standards for both surface and groundwater bodies within their respective jurisdictions. Basin plans designate beneficial uses for surface and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses, and describe implementation programs to protect all waters in the region.

The RWQCBs regulate discharges in waters within their respective jurisdictions through administration of National Pollutant Discharge Elimination System (NPDES) permits, waste discharge requirements, and water quality certifications. Water quality certification is administered by the RWQCBs to ensure that projects with federal permits do not violate state water quality standards.

The Santa Ana RWQCB has jurisdiction over the Project Study Area.

State General Storm Water Permit

In response to CWA requirements, the State of California adopted a general storm water permit covering non-point source discharges from certain industrial facilities and from construction sites involving more than one acre of disturbance. The General Permit requires preparation of a storm water pollution prevention plan (SWPPP) and implementation of best management practices to reduce the potential for non-storm water pollutants (chemicals and sediment) to be discharged from a construction site to waters of the state. The Proposed Project would likely be subject to this permit because the Proposed Project would involve greater than one acre of ground disturbance.

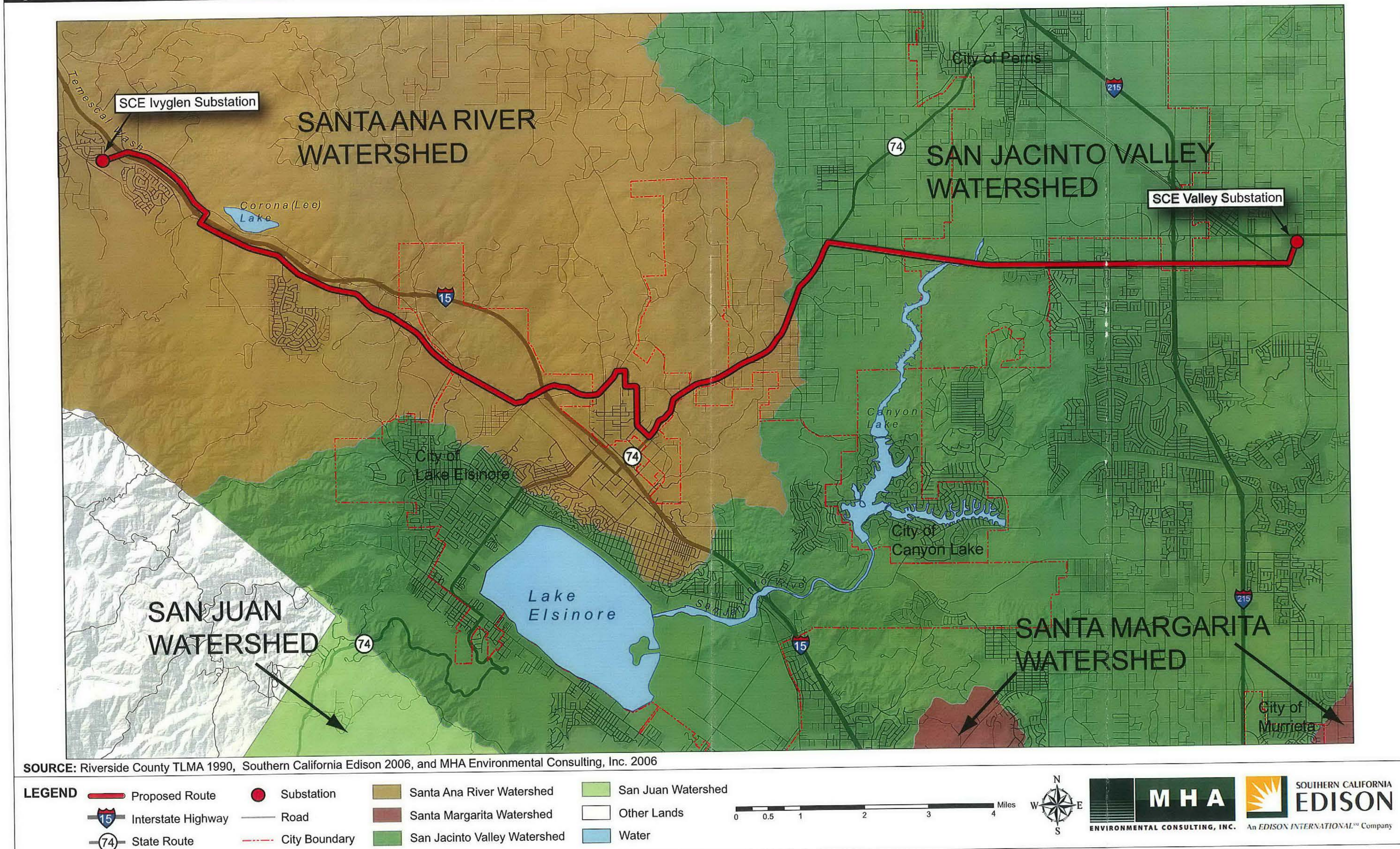
Regional and Local

County of Riverside

Riverside County General Plan. Riverside County is susceptible to flood hazards associated with major stream drainages, including the San Jacinto River. Riverside County has experienced severe flooding of rivers and creeks, and thus, the County discourages urban development on floodplains without major structural improvements. The Riverside County General Plan Safety Element provides several policies to minimize the risk and hazards associated with flooding that apply to the Proposed Project.

> **Policy S 4.2:** Enforce provisions of the Building Code in conjunction with the guideline that facilities using, storing, or otherwise involved with substantial quantities of onsite hazardous materials shall not be permitted, unless all standards

Figure 4.9-3: Regional Watersheds



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

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for elevation, anchoring, and flood-proofing have been satisfied; and hazardous materials are stored in watertight containers, not capable of floating.

Policy S 4.4: Prohibit the construction, location, or substantial improvement of structures in areas designated as floodways, except upon approval of a plan, which provides that the proposed development will not result in any increase in flood levels during the occurrence of a 100-year flood discharge.

Policy S 4.5: Prohibit substantial modification to water courses, unless modification does not increase erosion or adjacent sedimentation, or increase water velocities, so as to be detrimental to adjacent property nor adversely affect adjacent wetlands or riparian habitat.

Policy S 4.8: Require development in the floodway fringe, following a site-specific hydrology study, to implement measures that would avoid erosion or sedimentation on adjacent land, or water flows, or velocities, that would be detrimental to health and safety of persons or adjacent property, or adversely affect adjacent wetlands or riparian habitat.

Policy S 4.9: Minimize encroachment of development into the floodway fringe to convey floodwater without property damage and risk to public safety.

Policy S 4.10: Require all uses within the floodway fringe to be capable of withstanding flooding and to minimize uses of fill.

Policy S 4.11: Require new projects anywhere in the County to mitigate any impacts that it may have on the carrying capacity of the local storm drain system.

Policy S 4.12: Encourage neighboring jurisdictions to require development occurring adjacent to the County to consider impact on inundation protection in the County of Riverside.

City of Lake Elsinore

Elsinore Area Plan. The Elsinore Area Plan identifies the Temescal Wash, Murrieta Creek, and the San Jacinto River, as well as Lake Elsinore, as posing significant flood hazards. *The Lake Elsinore Management Project* is a phased construction program for lake stabilization and associated improvements that were implemented in the late 1980s by the Lake Elsinore Management Authority (City of Lake Elsinore 2006).

Lake Elsinore General Plan. The Lake Elsinore General Plan Update states that Lake Elsinore is currently considered an impaired water body by the State. Urban development directly affects surface water quality. Development increases runoff flows, which in turn increases transport and delivery of constituents, as well as causes erosion along existing waterways. Implementation of water quality restoration programs for Lake Elsinore, required by the State in accordance with the Clean Water Act regulations, may involve storm drain infrastructure and preservation of wetlands that will serve as a constraint to future development. Certain BMPs necessary to improve lake water quality levels may include preservation or enhancement of vegetation within major drainages or floodways that extend into the lake.

A majority of the of the regulatory requirements regarding environmental issues, such as flooding and surface water quality, are addressed at the project-specific level and not through General Plan designations. The General Plan Update includes general guidelines to address water resources issues. Relevant guidelines include:

- Adding a grading and erosion control ordinance that will reduce sediment impacts associated with construction

- Establishing a spill prevention and control program that will reduce impacts to surface and groundwater resources

The SWRCB Watershed Management Initiative and the Lake Elsinore Stabilization Project have identified specific projects. The goals and objectives for this organization include the following measures that are relevant to the Proposed Project.

- Through the implementation of the Multiple Species Conservation Plan, the City will preserve natural open space that contains extensive wetlands and drainages. Preservation of these natural features or buffering development from wetlands and drainage courses will ensure that further degradation of features that drain into the Lake (Lake Elsinore) do not occur.
- The Watershed Resources Management Initiative should preserve existing unimproved waterways, reaches, and tributaries of the San Jacinto River by protecting their natural condition, by establishing adequate buffers, and by stream restoration.
- Route stormwater flows to on-site detention and retention facilities to increase recharge to groundwater and improve water quality.

The Lake Elsinore General Plan identifies specific plans within or adjacent to floodplain areas and has developed policies to ensure that alterations to the floodplain and damage to structures from flooding are minimized. The policy that is relevant to the Proposed Project is:

- Directing new development to locations outside of the 100-year floodplain to reduce flood damage

City of Perris

City of Perris General Plan. The City of Perris has created goals, policies, and implementation measures that are included in the City of Perris General Plan. The policies that are relevant to the Proposed Project are:

Policy I.B.1: Provide leadership in efforts to improve Perris Valley Storm Channel and San Jacinto River Channel.

Policy I.B.3: Prepare and adopt a revised Area Drainage Plan including "regional" storm water detention basins capable of serving contributory areas of at least 100 acres.

Policy 1.B.4: Require that new development projects must incorporate facilities for on-site control of storm water run-off.

Policy 1.B.5: Require flood mitigation plans for all proposed projects in the 100-year floodplain.

4.9.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Violate any water quality standards or waste discharge requirements
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-

existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff
- Otherwise substantially degrade water quality
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam
- Cause inundation by seiche, tsunami, or mudflow

4.9.4 IMPACT ANALYSIS

Impact Summary

The construction of the Proposed Subtransmission Line Route and associated telecommunications line would have the potential to cause water quality impacts through drainage and erosion. These impacts would be reduced to a less than significant level through implementation of a SWPPP and SCE's best management practices. Hydrology impacts would be limited to potential polluted stormwater runoff. Potential for polluted stormwater runoff to impact local waterways is remote due to the distance from the Proposed Subtransmission Line Route to area waterways, implementation of SCE Proposed Measures, and implementation of a SWPPP. Project construction and operation would have a less than significant effect on hydrology and water quality in the Project Study Area.

Construction Impacts

Water Quality Standards and Waste Discharge Requirements

Subtransmission Line. Major drainages located in proximity to the Proposed Subtransmission Line Route include the San Jacinto River and Temescal Wash. The Proposed Subtransmission Line Route would cross the San Jacinto River approximately six miles west of the Valley Substation. The Proposed Subtransmission Line Route would also cross the Temescal Wash near Walker Canyon Road. The Proposed Subtransmission Line Route and access roads would also cross numerous ephemeral and intermittent drainages. Road construction could potentially accelerate soil erosion rates, and sedimentation in downstream waterways. Surface water quality could be diminished as a result of: 1) foundation excavation in the vicinity of pole locations; 2) scraping and grading, and material laydown at pull sites/laydown areas; 3) constructing culverts in ephemeral creeks; and 4) grading to construct new access roads. If sediment-laden runoff from the construction sites entered the nearby waterways, it could potentially increase turbidity, increase sedimentation, and reduce the flood-carrying capacity of downstream channels. Construction activities conducted when the ground is wet also creates the potential for increased runoff due to a reduction in infiltration and evaporation through vegetation removal. However, with implementation of SCE Proposed Measures to control erosion, impacts would be less than significant.

The Proposed Project would not require water or waste discharge. Stormwater from the Proposed Subtransmission Line construction sites would be managed through the provisions of the SWPPP. Runoff could eventually flow to the San Jacinto River and Temescal Wash, which flow to Lake Elsinore. However, runoff water would likely percolate into the alluvial soils before reaching drainages or surface water. The potential for water quality impacts to the San Jacinto River and Temescal Wash are low, but would be further reduced or avoided through implementation of BMPs and erosion control measures during construction.

SCE would be required to apply for coverage under the General Construction Activity NPDES Storm Water Permit. The permit is required for any construction activity that includes clearing, grading, excavation, reconstruction, and dredge and fill that results in the disturbance of at least one acre of total land area. The Proposed Project would disturb approximately 24 acres for pole and access road construction. The general permit requires preparation of a site-specific SWPPP, which would include measures from the general permit to avoid any potential for generating polluted storm water runoff.

Diesel fuel, lubrication oil, hydraulic fluids, antifreeze, and other construction-related materials would have a limited likelihood of affecting surface water quality. Drips and spills would be contained on-site before they could be released to storm water. The SWPPP is addressed in Section 4.8, Hazards and Hazardous Materials. The Proposed Subtransmission Line construction would not violate water quality standards or discharge requirements. The Subtransmission Line construction would have a less than significant effect on surface water or groundwater quality.

Substations. Improvements of the Valley and Ivyglen substations would involve upgrading and installing new equipment at the existing substation sites. Work would not involve additional ground disturbance and would not alter the existing substation drainage or expose pollutants to stormwater flows. The upgrades would not violate water quality standards or discharge requirements. The substation improvements would have no impact on water quality in nearby drainages.

Telecommunications Line. Installation of the telecommunications line on the new Subtransmission Line poles would not cause significant impacts related to water discharge or erosion. BMPs would be used to avoid erosion.

Construction of the telecommunications line would involve ground disturbance for the underground conduits. Underground conduits would be installed using the trenching method. A trench 18 inches wide and 36 inches deep would be dug with a backhoe. A 5-inch PVC conduit would be placed, and then covered with slurry and backfill. To mitigate the displacement of soil, the same methods would be followed as described in this section regarding construction of the Proposed Subtransmission Line. Underground portions of the line would not be located in relative proximity to surface water and would not be placed deep enough to encounter groundwater.

SCE would be required to apply for coverage under the General Construction Activity NDPES Stormwater Permit. The general permit requires preparation of a site-specific SWPPP, which would include measures from the general permit to avoid any potential for generating polluted storm water runoff. Equipment leaks and spills, as described under construction of the Subtransmission Line, would not present a significant threat to water quality.

Drainage and Erosion

Subtransmission Line. Subtransmission Line construction would involve excavation of holes for pole installation within a construction pad. Pole locations would be within existing ROW (unpaved access roads), adjacent to public roads, or along newly constructed access roads. New poles may be constructed adjacent to existing pole sites. Existing sites may require minor grading, leveling, and clearing to enlarge existing pads to accommodate new poles. Where new access roads would be necessary, pole sites would be cleared and graded when access roads are constructed. Poles would be an average of 200 feet apart, with a minimum span of 100 feet and a maximum span of 500 feet. The Proposed Project would include installation of approximately 615 LDS poles and 45 TSPs. TSP footings would be approximately six feet in diameter and at least 22 feet below the ground surface.

SCE would not install any poles within drainages as defined by the US Geological Survey (7.5 minute quadrangles) nor substantially modify any such drainages.

Approximately 16 miles of new temporary and permanent roads (12 feet wide) would be constructed for access to the construction pole pad sites. Existing roads would be used as much as possible. These new roads would be designed and constructed with the appropriate drainage features, such as culverts and water bars using industry standard BMPs.

Drainage and runoff would not be significantly affected by construction. However, there would be some potential for increased sediment in runoff from pole pad and access road construction sites. SCE's SWPPP would include best management practices, such as covering spoils piles, using erosion control equipment such as straw waddle and silt fencing, and recontouring and revegetating areas after construction to prevent sediment runoff to any nearby drainages. SCE Proposed Measures would further reduce potential impacts from erosion. Impacts would be less than significant.

Substations. Improvements to the substations would not alter any streams or other natural drainages. During new equipment installation, BMPs would be implemented to control possible storm water runoff from the site. Substation improvements would not affect drainage patterns because the alterations would all take place within the substation area. Substation improvements would have no impact to drainage and erosion.

Telecommunications Line. Constructing the telecommunications line on the Proposed Subtransmission Line poles would have no additional impact on drainage and erosion.

The process of trenching and boring to install the underground conduits for the telecommunications line could increase the potential for erosion in the area. Erosion control methods similar to those for the Proposed Subtransmission Line would be implemented. The trenching and conduit installation would not alter drainages because the trenches would be backfilled and recontoured to existing conditions. There would be no significant impacts related to drainage and erosion from installation of the telecommunications line.

Flood Hazard Zones

Subtransmission Line. Portions of Segments E-1, C-6, W-3, and W-6 would be constructed within 100-year FEMA designated flood hazard zones. SCE engineering design for poles would take into account that the base of some poles could be in flood zones and thereby avoid the adverse effects (potential displacement) related to construction of the Proposed Subtransmission Line and telecommunications line.

Lake Elsinore is the largest enclosed body of water near the Project Study Area. The closest segment of the Proposed Subtransmission Line is approximately two miles from Lake Elsinore.

The Line would not subject to inundation by seiche. Therefore, no impacts to the Proposed Project would occur from seiches.

The Project Study Area is over 20 miles from the Pacific Ocean and not subject to inundation by tsunami. There would be no impact to the Proposed Project from a tsunami.

Some slopes in the region surrounding the Project Study Area may be susceptible to mudflow. Most of the Proposed Subtransmission Line Route would be located on relatively flat terrain, far from steep slopes most susceptible to mudflows. Therefore, potential impacts to the Proposed Subtransmission Line associated with mudflows would be less than significant.

Substations. The Valley Substation is within a FEMA-designated 100-year flood hazard zone. Upgrades would be consistent with the existing design of the substation and would minimize effects to equipment from potential flooding. There would be no impact related to inundation from seiche or tsunami, as stated in the above Subtransmission Line section.

Telecommunications Line. The impact of construction of the telecommunications line on the Subtransmission Line poles would be the same as the construction of the Subtransmission Line and would not be significant.

The construction of the underground portions of the telecommunication lines would not increase risks of flooding. The most eastern portion of the telecommunications line slated for underground construction would be installed in an area included within the 100-year flood plain. Underground segments of the telecommunications line would be designed to withstand periods of flooding or inundation, and would not be significantly affected by flooding. There would be no significant impact related to flooding for the construction of the telecommunications line. There would be no impact related to inundation from seiche, or tsunami as stated above.

Groundwater Recharge

The construction of the Proposed Project, including the Proposed Subtransmission Line, substation improvements, and the telecommunications line, would not create substantial amounts of new impermeable surfaces that could reduce groundwater absorption rates and deplete groundwater supplies. The project would not include any facilities that would use groundwater. The Proposed Project would have no impact to groundwater recharge.

Operational Impacts

Water Quality Standards and Waste Discharge

Subtransmission Line. SCE would visually inspect the Proposed Subtransmission Line at least once a year by driving and/or flying the line route. Vehicles would use existing access roads and would not impact water quality. Risk of accidental release of chemicals from vehicles into existing water drainages during maintenance would be less than significant.

Substations. There would be no impacts to water quality during the operation and maintenance phase of the substations.

Telecommunications Line. Operation of the telecommunications line would have no impacts on water quality. Lines would operate from within the duct banks and on Proposed Subtransmission Line poles. Occasional maintenance would be required, but maintenance work would not likely require ground disturbance that could cause erosion and sedimentation. Therefore, no impacts to water quality would occur.

Groundwater Recharge

Operation of the Proposed Project would not affect groundwater resources. Total installation includes the creation of approximately 660 square feet of impervious surface (foundations for TSPs) and 24 acres of semi-impervious surface (new unpaved access roads) over an area of approximately 25 square miles.

Water that currently enters the substation sites percolates into the local groundwater system. Most rainwater falling on the site would continue percolating, with only minor additional storm water flowing to a storm drain. Therefore, the amount of groundwater recharge would not decrease substantially in the area. Therefore, there would be no impact to groundwater recharge.

Drainage and Erosion

The Proposed Subtransmission Line, substation upgrades, and the telecommunications line would be designed to minimize erosion. Operation of the new facilities would include periodic maintenance. Roads would be maintained such that they would not cause or contribute to erosion in the area. Maintenance work would not affect drainages and would not require ground disturbance that could cause erosion. Operation and maintenance of the Proposed Project would have no significant impacts to drainage and erosion.

Flood Hazard Zones

Portions of the Proposed Subtransmission Line would be installed within a FEMA designated 100-year flood hazard zone and dam inundation zones. The poles may be exposed to flood conditions but would not increase local flooding. Poles generally have a small footprint and would not substantially alter or spread flood flows. Impacts related to flooding would not be significant.

4.9.5 SCE PROPOSED MEASURES

HYDRO-SCE-1: A Construction SWPPP would be submitted to Riverside County along with grading permit applications. Implementation of the Plan would help stabilize graded areas and waterways, and reduce erosion and sedimentation. The plan would designate BMPs that would be adhered to during construction activities. Erosion-minimizing efforts such as straw wattles, water bars, covers, silt fences, and sensitive area access restrictions (for example, flagging) would be installed before clearing and grading began. Mulching, seeding, or other suitable stabilization measures would be used to protect exposed areas during construction activities. During construction activities, measures would be in place to ensure that contaminants are not discharged from construction sites. The SWPPP would define areas where hazardous materials would be stored, where trash would be in-place, where rolling equipment would be parked, fueled and serviced, and where construction materials such as reinforcing bars and structural steel members would be stored. Erosion control during grading of the construction sites and during subsequent construction would be in-place and monitored as specified by the SWPPP. A silting basin(s) would be established, as necessary, to capture silt and other materials, which might otherwise be carried from the site by rainwater surface runoff.

HYDRO-SCE-2: An environmental training program would be established to communicate environmental concerns and appropriate work practices, including spill prevention and response measures, and SWPPP measures, to all field personnel. A monitoring program would be implemented to ensure that the plans are followed throughout the construction period.

HYDRO-SCE-3: The Construction SWPPP would include procedures for quick and safe cleanup of accidental spills. This plan would be submitted with the grading permit application. The Construction SWPPP would prescribe hazardous materials handling procedures for reducing the potential for a spill during construction, and would include an emergency response program to ensure quick and safe cleanup of accidental spills. The plan would identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, would be permitted.

HYDRO-SCE-4: Dewatering operations would be performed if groundwater is encountered while excavating or constructing the Proposed Subtransmission Line or underground portions of the telecommunications line. These operations would include, as applicable, the use of sediment traps and sediment basins in accordance with BMP NS-2 (Dewatering Operations) from the California Stormwater Quality Association's (CASQA) California Stormwater BMP Handbook.

4.9.6 MITIGATION MEASURES

The impacts on hydrology and water quality would be less than significant, and therefore, no mitigation is required.

4.9.7 ALTERNATIVES

The impact comparison Table 4.9-1 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.9-1: Hydrology and Water Quality Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/Mitigation Measures
E-2	Would cross further northwest than the Proposed Subtransmission Line Route before heading west to Highway 74, intersects proposed telecommunications line at Valley Substation	Would be within dam inundation and 100-year flood zones	Greater Impact	SCE to follow flood/dam inundation stabilization methods required in General Order 95
C-2	No significant change	Same as Proposed Route	Equal Impact	Same as Proposed Route
C-7	No significant change	Same as Proposed Route	Equal Impact	Same as Proposed Route
W-2	Would not cross Temescal Wash, as would Proposed Subtransmission Line Route	Less impact than Proposed Subtransmission Line Route	Less Impact	Same as Proposed Route
W-3	Would cross Temescal an additional time	Could cause water quality impacts to surface water, or disturbance of drainage features, causing erosion	Greater Impact	Same as Proposed Route
W-5	No significant change	Same as Proposed Route	Equal Impact	Same as Proposed Route

4.9.8 REFERENCES

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4.10 Land Use and Planning

4.10.1 ENVIRONMENTAL SETTING

The Proposed Subtransmission Line and telecommunications line would cross lands in the cities of Lake Elsinore and Perris and predominately rural unincorporated areas of Riverside County. Most land that would be crossed by the Proposed Subtransmission Line and telecommunications line is undeveloped, with the exception of the lands within the two cities. Table 4.10-1 identifies the acreages of current land uses in rural areas of Riverside County[1].

Table 4.10-1: Unincorporated Riverside County Cumulative Acreage Summary

General Plan Foundation Component[1]	Western Riverside County Acreage	Percent of Western Riverside County	Total Riverside County Acreage[3]	Percent of Total Riverside County
Agriculture	22,603	2%	180,178	4%
Rural	278,913	22%	326,294	8%
Rural Community	73,147	6%	77,167	2%
Open Space	657,979	52%	3,297,992	78%
Community Development	137,807	11%	200,304	5%
Other[2]	87,253	7%	119,387	3%
Total	***1,257,702***	***100%***	***4,201,322***	***100%***

NOTES:
[1] The General Plan Foundation Components describe the overall nature and intent of each of the five General Plan and uses: Agriculture, Rural, Rural Community, Open Space, and Community Development.
[2] Includes the March Inland Port, Indian Lands, and Major Roadways. Does not include cities within Riverside County.
[3] Similar information is not available from the cities of Perris and Lake Elsinore

SOURCE: Riverside County, 2003 (Table LU-1)

Project Area

The Proposed Subtransmission Line and telecommunications line cross different land use environments. These areas are shown in Figure 3.2-1 in Chapter 3, Project Description, and the General Plan land use designations are shown in Table 4.10-2 and Figure 4.10-1 (Riverside County 2003. City of Perris 2006. City of Lake Elsinore 1990).

Table 4.10-2: Project Route Land Uses

Segment	Jurisdiction	General Plan Designation
E-1	Riverside County	Commercial Retail Light Industrial Medium Density Residential Rural Mountainous Very Low Density Residential
	City of Perris	Community Commercial Open Space Single Family Residential, 6,000 sq. ft. Minimum Lots

[1] Comparable information for the cities of Lake Elsinore and Perris is not available.

Table 4.10-2 *(Continued)*: Project Route Land Uses		
Segment	**Jurisdiction**	**General Plan Designation**
C-1	Riverside County	Business Park Commercial Retail Light Industrial Very Low Density Residential
	City of Lake Elsinore	North Peak Specific Plan
C-3	Riverside County	Business Park Rural Mountainous Very Low Density Residential
	City of Lake Elsinore	Outlet Center Specific Plan
C-4	Riverside County	Rural Mountainous Very Low Density Residential
	City of Lake Elsinore	Outlet Center Specific Plan
C-6	City of Lake Elsinore	Light Industrial Outlet Center and Alberhill Ranch Specific Plans
W-1	Riverside County	Mineral Resources Open Space Water Open Space Rural Residential
	City of Lake Elsinore	Alberhill Ranch and Brighton Alberhill Specific Plans
W-4	Riverside County	Commercial Retail Medium Density Residential Conservation Open Space Water Open Space Rural Residential
W-8	Riverside County	Commercial Retail Light Industrial
W-10	Riverside County	Light Industrial Mineral Resources Open Space

SOURCE: City of Lake Elsinore 1990 and County of Riverside 2006

4.10.2 REGULATIONS, PLANS, AND STANDARDS

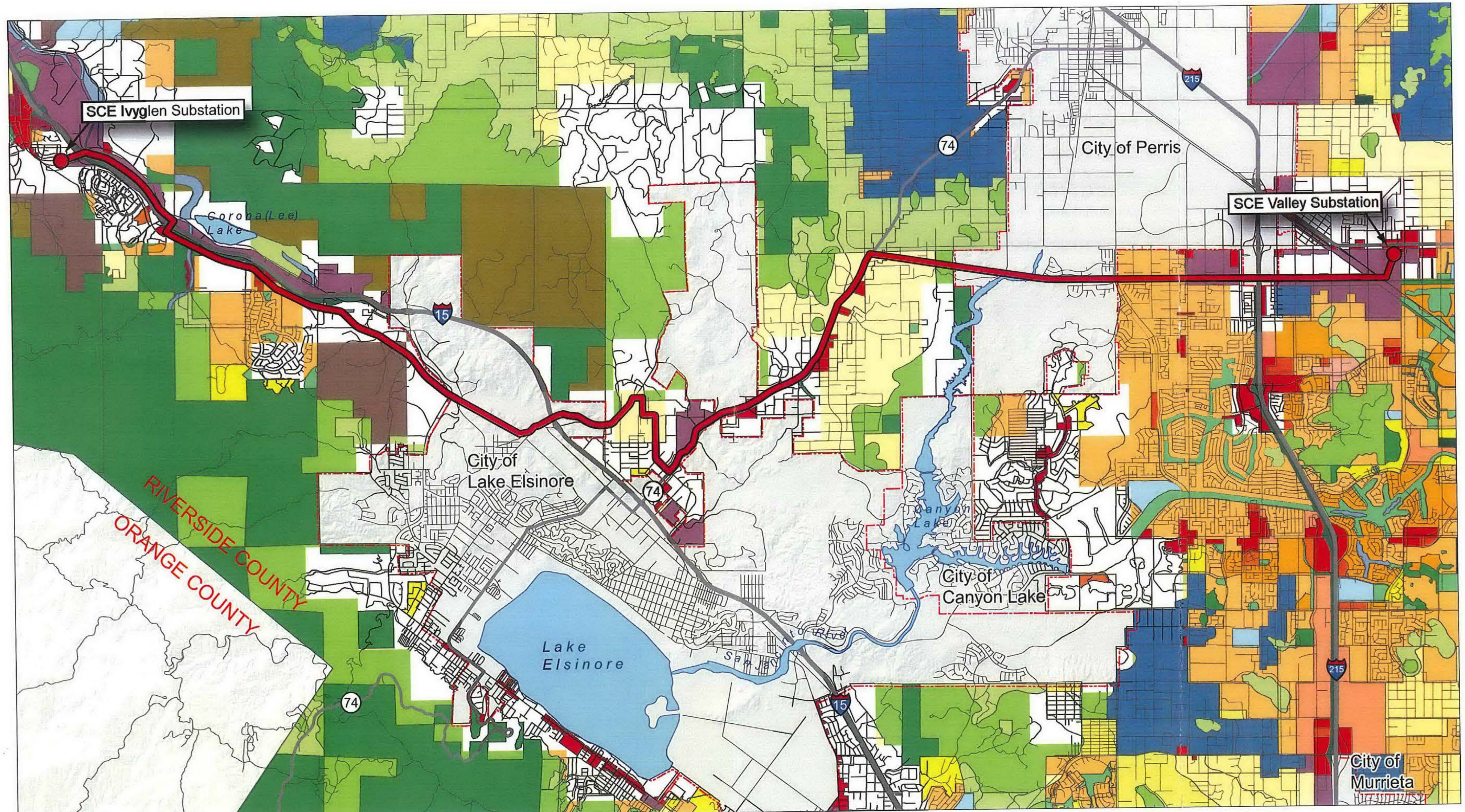
Federal

Land use is regulated at the regional and local level. There are no federal land use regulations applicable to the Proposed Project.

State

The California Public Utilities Commission (CPUC) General Order (GO) No. 131-D, Section XIV B clarifies that "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters." Due to this GO, the public utilities are directed to consider local regulations and consult with local agencies, but the county and city regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project.

Figure 4.10-1: General Plan Land Use Designations for Unincorporated Riverside County



SOURCE: Riverside County TLMA 2004 and MHA Environmental Consulting, Inc. 2006

LEGEND

Proposed Route
Interstate Highway
State Route
Substation
Road
City Boundary

*County General Plan Legend on Back of Map

Figure 4.10-1 *(Continued)*: General Plan Land Use Designations for Unincorporated Riverside County

LEGEND

- Heavy Industrial
- Light Industrial
- Commercial Retail
- Public Facilities
- Commercial Office
- Business Park
- Rural Mountainous
- Open Space Conservation
- Open Space Recreation
- Open Space Rural
- Mineral Resources Open Space
- Agriculture
- Water Open Space

- Very Low Density Residential
- Low Density Rural Community
- Rural Residential
- Estate Density Residential
- Estate Density Rural Community
- Low Density Residential
- Medium Density Residential
- Medium High Density Residential
- High Density Residential
- Very High Density Residental

SOURCE: Riverside County TLMA 2004 and MHA Environmental Consulting, Inc. 2006

Regional and Local

Segment E-1 of the Proposed Project crosses through parts of the City of Perris. Segments C-1, C-3, C-4, and C-6 of the Proposed Project traverse areas within the City of Lake Elsinore, and the remainder of the Subtransmission Line segments cross through unincorporated areas of Riverside County.

County of Riverside

The Proposed Subtransmission Line and telecommunications line is within the boundaries of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The overall goal of the MSHCP is to maintain biological diversity within a rapidly urbanizing region. Refer to Section 4.5, Biological Resources, for further discussion of applicable regulations.

The route crosses over or adjacent to lands with a variety of General Plan land use designations. The designations are shown in Table 4.10-3 and Figure 4.10-1.

Table 4.10-3: Riverside County General Plan Designations and Relevant Policies for Subtransmission Line Route

Land Use Designation	Description	Relevant Policies
Business Park	Allows for employee-intensive uses and supporting retail uses. Building intensity ranges from 0.25 to 0.6 floor area ratio (FAR).	LU 24.2: Control heavy truck and vehicular access to minimize potential impacts on adjacent properties. (AI 43) LU 24.8: Require that industrial development be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area. (AI 3)
Commercial Retail	Allows for the development of commercial retail uses at a neighborhood, community, and regional level, as well as for professional office and tourist-oriented commercial uses. FARs range from 0.2 to 0.35.	No Relevant Policies
Light Industrial	Allows industrial and related uses, as well as supporting retail uses. Building intensity ranges from 0.25 to 0.6 FAR.	No Relevant Policies
Medium Density Residential	Allows for single-family detached houses and suburban subdivisions. The density range is 2.0 to 5.0 dwelling units per acre.	No Relevant Policies
Mineral Resources	Allows for mineral extraction and processing facilities designated on the basis of the Surface Mining and Reclamation Act (SMARA) of 1975 classification. Areas held in reserve for future mining activities also fall under this designation.	LU 21.2: Protect lands designated as Open Space-Mineral Resource from encroachment of incompatible land uses through buffer zones or visual screening. (AI 3) LU 21.3: Protect road access to mining activities and prevent or mitigate traffic conflicts with surrounding properties. LU 21.4: Require the recycling of mineral extraction sites to open space, recreational, or other uses that are compatible with the surrounding land uses.

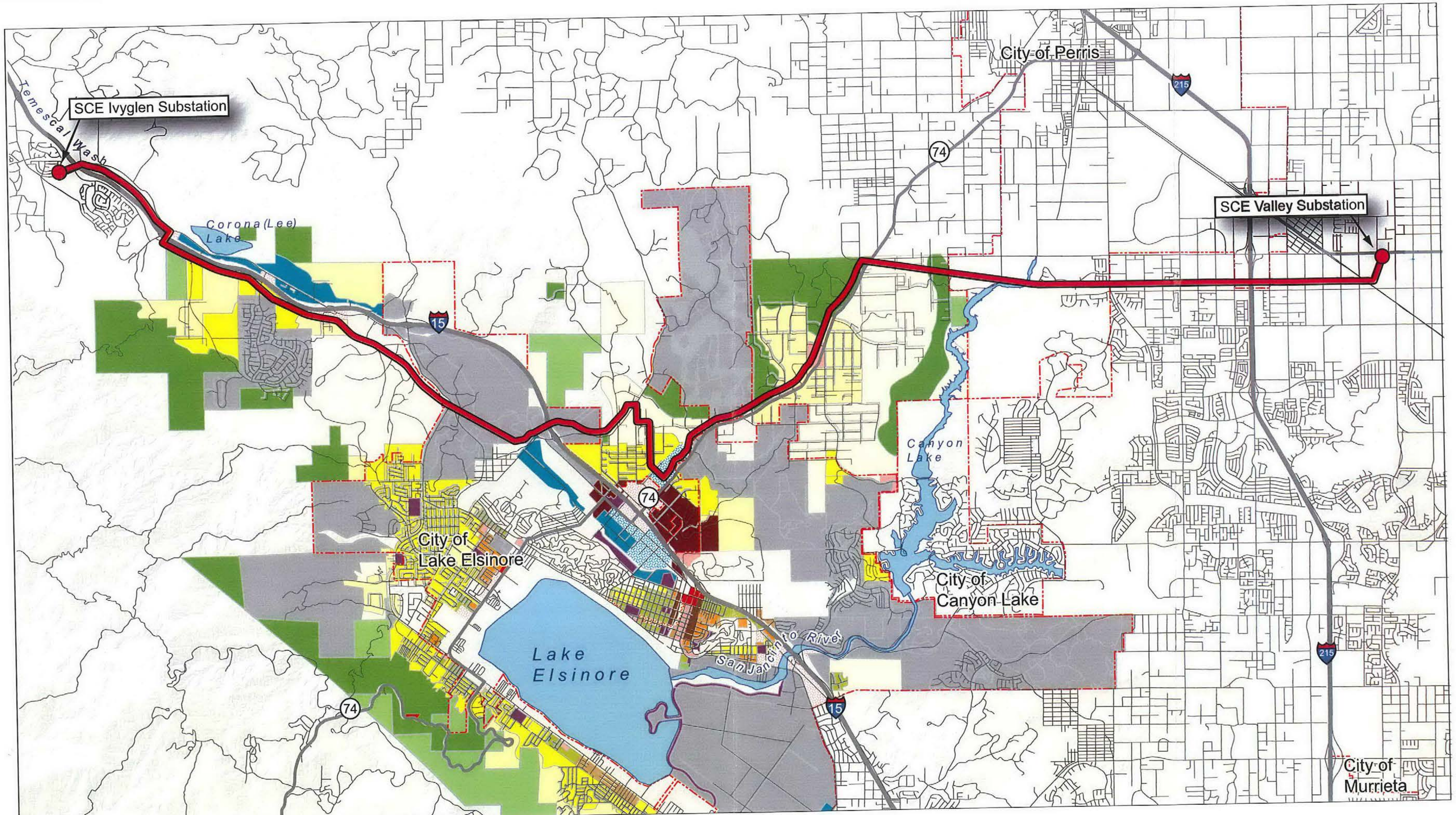
Table 4.10-3 *(Continued)*: Riverside County General Plan Designations and Relevant Policies for Subtransmission Line Route		
Land Use Designation	**Description**	**Relevant Policies**
Open Space – Conservation and Water	The Open Space-Conservation Habitat land use designation applies to public and private lands conserved and managed in accordance with adopted MSHCPs. Open Space-Water designated areas include bodies of water and major floodplains and natural drainage corridors.	LU 18.1: Require that structures be designed to maintain the environmental character in which they are located. (AI 3) LU 18.2: Cooperate with the California Department of Fish and Game (CDFG), United States Fish and Wildlife Service (USFWS), and any other appropriate agencies in establishing programs for the voluntary protection, and where feasible, voluntary restoration of significant environmental habitats. (AI 10)
Rural Mountainous and Rural Residential	The Rural Mountainous land use designation allows single-family residential uses, with a maximum residential density of 1 dwelling unit per 10 acres. This designation applies to areas of at least 10 acres where a minimum 70% of the area has slopes of 25% or greater. The Rural Residential land use designation allows one single-family residence per five acres. For multi-lot developments, the minimum lot size per residential unit is 2.5 acres, though the overall density of the development must not exceed 0.2 dwelling units per acre.	LU 17.1: Require that grading be designed to blend with undeveloped natural contours of the site and avoid an unvaried, unnatural, or manufactured appearance. (AI 23) LU 17.2: Require that adequate and available circulation facilities, water resources, sewer facilities and/or septic capacity exist to meet the demands of the proposed land use. (AI 3) LU 17.3: Ensure that development does not adversely impact the open space and rural character of the surrounding area. (AI 3) LU 17.6: Provide programs and incentives that allow rural areas to maintain and enhance their existing and desired character. (AI 9, 30)
Very Low Density Residential	The Very Low Density Residential land use designation provides for the development of detached single-family residential dwelling units on large parcels. The density range is from 1 dwelling unit per acre to 1 dwelling unit per 2 acres.	No Relevant Policies

SOURCE: County of Riverside 2003

The Proposed Subtransmission Line and telecommunications line crosses the following Zoning Districts in the County of Riverside (County of Riverside 2006), illustrated in Figure 4.10-2:

- CPS – Scenic Highway Commercial
- IP – Industrial Park
- MRA – Mineral Resources and Related Manufacturing
- MSC – Manufacturing, Service Commercial
- R1 – One-Family Dwellings
- R4 – Planned Residential
- RA – Residential Agricultural
- RR – Rural Residential
- RT – Mobile home Subdivision and Mobile home Park
- RTR – Mobile home Subdivision, Rural

Figure 4.10-2: General Plan Land Use Designations for the City of Lake Elsinore



SOURCE: City of Lake Elsinore EDIT Division, Riverside County GIS 2005, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND Proposed Route; Interstate Highway; State Highway; Road; City Boundary; Substation; Water

*City of Lake Elsinore General Plan Legend on Back of Map

N W E S

0 0.5 1 2 3 4 Miles

MHA ENVIRONMENTAL CONSULTING, INC.

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

Figure 4.10-2 *(Continued)*: General Plan Land Use Designations for the City of Lake Elsinore

LEGEND

- Mountainous (1 DU/10 Acre Max.)
- Very Low Density Residential (0.5 DU/1 Acre Max.)
- Low Density Residential (3 DU/1 Acre Max.)
- Low Medium Density Residential (6 DU/1 Acre Max.)
- Medium Density Residential (12 DU/1 Acre Max.)
- Medium High Density Residential (18 DU/1 Acre Max.)
- High Density Residential (24 DU/1 Acre Max.)
- Mixed Use
- Neighborhood Commercial
- General Commercial
- Tourist Commercial
- Commercial Office
- Freeway Business
- Business Park
- Limited Industrial
- Open Space / Recreational
- Public / Institutional
- Floodway
- Approved Specific Plan
- Future Specific Plan

SOURCE: City of Lake Elsinore EDIT Division, Riverside County GIS 2005 and MHA Environmental Consulting, Inc. 2006

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- SP – Specific Plan
- W1 – Watercourse, Watershed and Conservation Areas
- W2M – Controlled Development Areas with Mobile homes

City of Lake Elsinore

The Proposed Subtransmission Line and telecommunications line crosses over or adjacent to lands with a variety of General Plan land use designations. The designations are shown in Table 4.10-4 and Figure 4.10-2.

Table 4.10-4: City of Lake Elsinore General Plan Designations and Relevant Policies for Subtransmission Line Route

Land Use Designation	Description	Relevant Policies
Light Industrial	Limited Industrial establishes areas where uses such as manufacturing, assembly, electronics, warehousing, machine repair shops and other non-hazardous and low nuisance industrial uses are appropriate.	No Relevant Policies
Specific Plan Areas (Alberhill Ranch, North Peak, Outlet Expansion, and Brighton Alberhill)	This designation requires the preparation of a specific plan that includes "all detailed regulations, conditions, programs and proposed legislation which shall be necessary and convenient for the systematic implementation" of each of the mandated elements and any optional elements adopted by the city as part of the general lands.	No Relevant Policies

SOURCE: City of Lake Elsinore 1990

The Proposed Subtransmission Line and telecommunications line passes through the following Zoning Districts in the City of Lake Elsinore (Figure 4.10-2):

- SP – Specific Plan (North Peak, Outlet Expansion, Alberhill Ranch, and Brighton Alberhill)
- R1 – Single Family Residential
- M1 – Limited Manufacturing

The project is exempt from these zoning designations as stated in the City of Lake Elsinore Municipal Code, Section 17.02.1530 (City of Lake Elsinore, 1987):

> **Public utility installation.** Building and other structures and equipment owned and operated by a public utility or private utility company subject to regulation by the State Public Utilities Commission. (Ord. 772, § 17.02.1530; 1986)

City of Perris

The Proposed Subtransmission Line and telecommunications line crosses over or adjacent to lands with a variety of General Plan land use designations. The designations are shown in Table 4.10-5 and Figure 4.10-3.

The Proposed Project passes within an existing easement through the following Zoning Districts in the City of Perris (City of Perris, 2005) (Figure 4.10-3):

- CC – Community Commercial
- R-6,000 – Single-Family Residential, 6,000 Square Foot Minimum Lots
- OS – Open Space

Table 4.10-5: City of Perris General Plan Designations and Relevant Policies for Subtransmission Line Route

Land Use Designation	Description	Relevant Policies
Community Commercial	Principal uses in this category typically serve a much broader geographic market than those in the Commercial Neighborhood category.	No Relevant Policies
Open Space (San Jacinto River)	Open Space designates land used for active or passive parkland. In addition, Open Space may apply to undeveloped, natural areas such as the San Jacinto River.	No Relevant Policies
Residential R-6,000	R-6,000 Single-Family Residential, 6,000 sq ft lot allows for low-density, single-family dwellings at densities up to 7 units per acre.	No Relevant Policies

SOURCE: City of Perris 2006

4.10.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Physically divide an established community
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Conflict with any applicable habitat conservation plan or natural community conservation plan

4.10.4 IMPACT ANALYSIS

Impact Summary

Construction, operation, and maintenance of the Proposed Subtransmission Line and telecommunications line would not divide any community or conflict with any applicable local plans or policies. The Proposed Project would conflict with local policies related to aesthetics but the impacts will be less than significant because the Proposed Project is exempt from those regulations by the CPUC. The Proposed Project could potentially have significant effects due to conflicts with the local habitat conservation plan but those impacts would be reduced to less than significant levels by proposed mitigation. The proposed improvements to the Valley and Ivyglen substations would not have any impact on land use or planning as there is no proposed expansions or change of use.

Construction Impacts

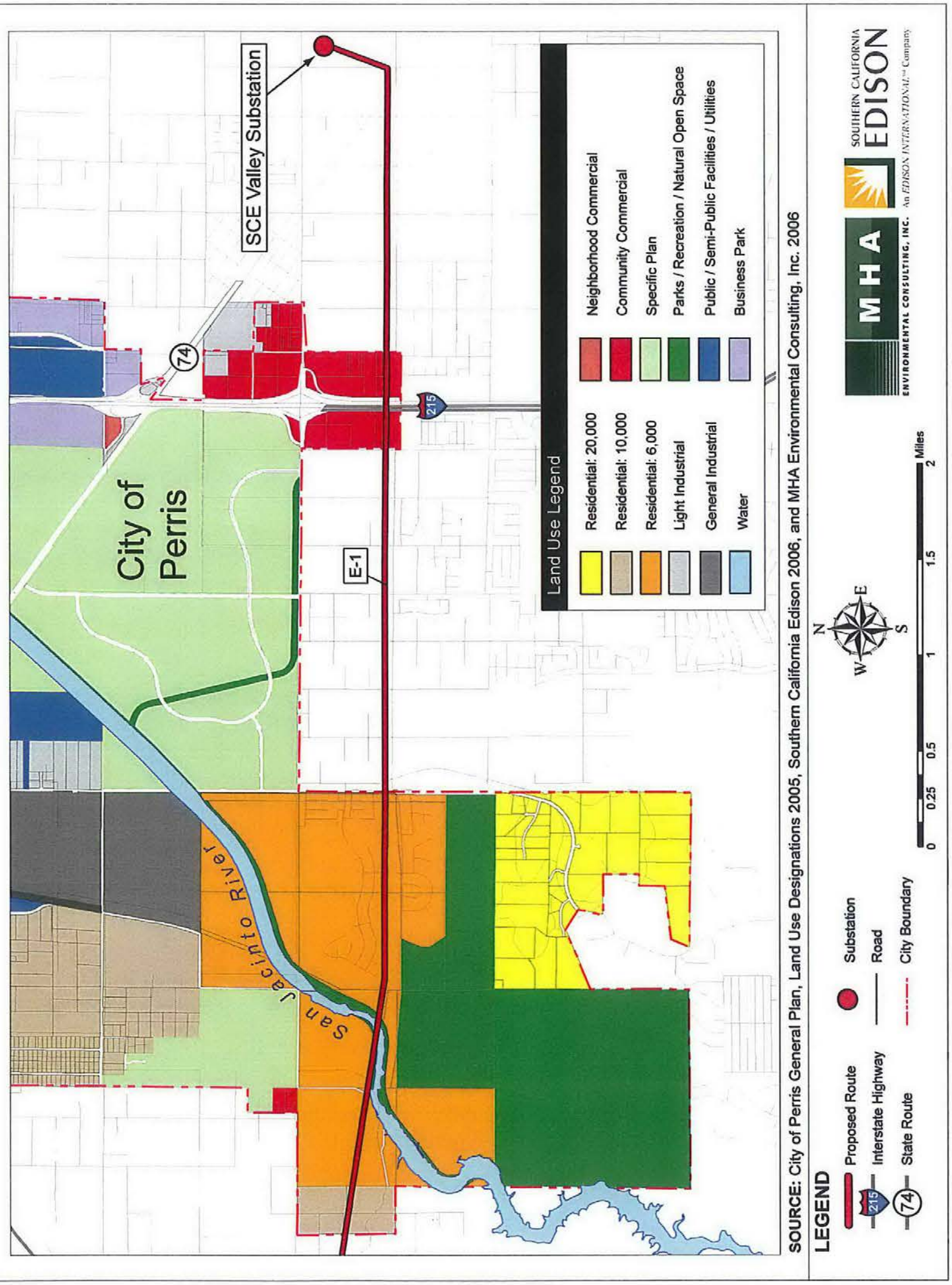
Existing Communities

Construction of the Proposed Project would not divide existing communities.

Land Use Plans, Policies, or Regulations

Construction of the Proposed Project would be visible from SR-74 and I-15 and would therefore

Figure 4.10-3: General Plan Land Use Designations for the City of Perris



SOURCE: City of Perris General Plan, Land Use Designations 2005, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006 conflict with certain land use elements within the County of Riverside's Land Use Element (LU 13.3). The text of this regulation is listed in Section 4.2.2 (Aesthetics). However, the visual impacts associated with construction are unavoidable and are considered temporary and less than significant. Standard construction methods would be followed to minimize the visual impact caused by construction.

Habitat Conservation Plans

The Proposed Subtransmission Line and telecommunications line would be located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) boundary. The overall goal of the MSHCP is to maintain biological diversity within a rapidly urbanizing region. SCE's compliance with the Western Riverside County MSHCP (BIO-SCE-1, BIO-SCE-5, and BIO-MM-6) would mitigate any impacts to natural vegetation communities that are covered by the Plan; therefore, the Proposed Project's impact would be less than significant. Refer to Section 4.5, Biological Resources, for further discussion.

Operational Impacts

Existing Communities

The Proposed Subtransmission Line and telecommunications line would pass primarily through the rural areas of Riverside County. Those segments of the line that would be located near the cities of Perris and Lake Elsinore would be constructed primarily along existing roads or utility ROWs. Segments C-1, C-3, C-4, C-6, W-1, W-4, W-8, and W-10 include new ROW, including a crossing of the I-15 in Lake Elsinore. The Proposed Route is near existing roadways and would not divide existing communities. The impact would be less than significant.

Land Use Plans, Policies, or Regulations

The Proposed Project would be visible from SR-74 and I-15 and would therefore conflict with one policy in the Circulation Elements of the Riverside County General Plan (C 25.2). These policies are primarily related to the visibility of the Proposed Project from scenic highway corridors. The full text of these regulations is listed in Section 4.2.2 (Aesthetics). An analysis of the potential visual impacts of the Proposed Project on the eligible State and County scenic highway corridors (I-15 and Highway 74) is found in Section 4.2.4 under the sub-heading of *Visual Character and Quality*.

Though the Proposed Project would conflict with some of the land use plans, policies and regulations in the County the impacts are less than significant due to the CPUC's jurisdiction over electric power line projects and substations and the exempt status of such projects by General Order No. 131-D. The CPUC does require that public utilities consult with local agencies and consider these local regulations in locating these projects. The relevant policies are related to protecting the environment and avoiding impacts; the Proposed Project has been designed to minimize or avoid such impacts where possible.

Habitat Conservation Plans

The operation of the Proposed Project would conflict with the MSHCP only in regards to predator perching and any potential impact would be mitigated to less than significant by BIO-MM-12.

4.10.5 SCE PROPOSED MEASURES

SCE Proposed Measures are identified in Sections 4.2.5 (Aesthetics) and 4.5.5 (Biological Resources). The SCE Proposed Measures identified throughout this PEA serve to reduce or avoid environmental impacts.

4.10.6 MITIGATION MEASURES

Mitigation Measures are identified in Section 4.5.6 (Biological Resources) to avoid conflicts with the MSHCP.

4.10.7 ALTERNATIVES

The impact comparison Table 4.10-6 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.10-6: Land Use and Planning Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Located in residentially designated areas in the City of Perris that currently have no SCE overhead utilities.	Additional visual impact due to locations on Betty Road, Mapes Road, or Goetz Road where no SCE overhead utilities are located currently. Additional encroachment into the Perris city limits.	Greater Impact	Same as Proposed Route
C-2	Located slightly north of the Proposed Subtransmission Line Route through rural county lands.	Lesser visual impact due to location farther from Highway 74.	Less Impact	Same as Proposed Route
C-7	Located on the southeast side of Highway 74.	Lesser visual impact due to location with an existing 33 kV line.	Less Impact	Same as Proposed Route
W-2	Would be located north of I-15 and with greater proximity to the highway. The lands crossed would be County lands rather than City of Lake Elsinore lands, and would be primarily open space and some light industrial.	See Section 4.2 (Aesthetics) for impacts due to proximity to I-15. No other impacts.	Equal Impact	Same as Proposed Route
W-3	Would cross I-15 with Temescal Canyon Road east of Horsethief Canyon Road.	Same as Proposed Route	Equal Impact	Same as Proposed Route
W-5	Would pass through additional residential lands, including passing between private residential properties in the community located just to the southeast of Glen Ivy.	Would divide the established community located just to the southeast of Glen Ivy.	Greater Impact	Unavoidable significant impact

4.10.8 REFERENCES

City of Lake Elsinore. 1987. *City of Lake Elsinore Municipal Code.*

City of Lake Elsinore. 1990. *City of Lake Elsinore General Plan.*

City of Perris. 2005. *City of Perris Municipal Code.*

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SCAG (Southern California Association of Governments). 2006. Growth Forecasting. Website: http://www.scag.ca.gov/forecast/index.htm. Accessed April 2006.

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4.11 Mineral Resources

4.11.1 ENVIRONMENTAL SETTING

Mineral resources include natural gas, petroleum, coal, gold, copper and other heavy metals, gravel, stone, and any other valuable geologic resources, such as geothermal resources.

Mineral Resources

The California Geological Survey (CGS) classifies the regional significance of mineral resources in accordance with the California Surface Mining and Reclamation Act of 1975 . Mineral Resource Zones (MRZs) have been designated to indicate the significance of mineral deposits. The MRZ categories follow:

- **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
- **MRZ-2:** Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence
- **MRZ-3:** Areas containing mineral deposits the significance of which cannot be evaluated from available data
- **MRZ-4:** Areas where available information is inadequate for assignment to any other MRZ

The MRZ classifications are applied based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data. The designations are also based on socioeconomic factors, such as market conditions and urban development patterns.

Mineral resources in the Project Study Area include clay, limestone, iron ore, sand, and construction aggregate (County of Riverside 2003). The Project Study Area is near to and encompasses areas with economically viable deposits of clay, sand, gravel, and stone products, including decomposed granite. Most of the Project Study Area is classified as MRZ-3, and areas along the I-15 corridor north of Lake Elsinore are classified MRZ-2. Portions of Proposed Subtransmission Line Segment W-1 pass through an area designated MRZ-2. Five mines were active in the Lake Elsinore area producing clay, stone/rock, and sand and gravel (County of Riverside 2005; Larose et al. 1999). Decomposed granite has also been mined in the Lake Elsinore area (Larose et al. 1999).

Portions of Segments C-4 and C-6 are located adjacent to active and planned aggregate and clay mining operations owned by Pacific Aggregates on the western side of I-15 at Nichols Road in the City of Lake Elsinore.

Geothermal Resources

The County's principal renewable geologic resource is geothermal resources. Geothermal resources associated with elevated heat flow along the Elsinore Fault Zone have been known for some time. Native Americans and early settlers are believed to have used the area's hot springs, and in the 19th century, the Town of Elsinore (now the City of Lake Elsinore) became famous for its sulfur waters, which supported a local spa industry. The region's largest hot springs are at Murrieta Hot Springs near Temecula, along the principal trace of the Elsinore fault. Smaller hot springs are present in a number of places along splay faults (Norris and Webb 1990). Geothermal resources in the Project Study Area have not been developed for power production, although the County General Plan (County of Riverside 2003) identifies some potential for such development.

Oil and Gas

There are no known oil or gas reserves identified in or within 15 miles of the Project Study Area (City of Lake Elsinore 2006, State of California 2001).

4.11.2 REGULATIONS, PLANS AND STANDARDS

Federal and State

There are no federal or state regulations applicable to the Proposed Project.

Regional and Local

County of Riverside

Riverside County designates lands as Open Space-Mineral Resource based on the federal Surface Mining Control and Reclamation Act. Areas held in reserve for future mining also fall under this designation. Ancillary structures or uses may be permitted that assist in the extraction, processing, or preservation of minerals. Actual building structure size, siting, and design are determined on a case-by-case basis.

The following policies apply to properties designated as Open Space-Mineral Resources.

> **LU 21.2:** Protect lands designated as Open Space-Mineral Resources from encroachment of incompatible land uses through buffer zones or visual screening.
>
> **LU 21.3:** Protect road access to mining activities and prevent or mitigate traffic conflicts with surrounding properties.

4.11.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
- Result in loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan

4.11.4 IMPACT ANALYSIS

Subtransmission Line

Segments C-4 and C-6 of the Proposed Subtransmission Line would be located adjacent to lands being actively used for aggregate and clay mining by Pacific Aggregates. The area is planned for commercial development in the next three to five years (Worthey 2006). The Proposed Project would cause no impact to mineral resources resulting from construction or operation of the Proposed Subtransmission Line. The Proposed Project would not block access to mining sites or be incompatible with mining.

Telecommunications Line

The proposed telecommunications line would follow the same route as the Proposed Subtransmission Line. Construction and operation of the telecommunications line would have no impact to mineral resources. Portions of the telecommunications line would be buried, but would not be located in areas known to contain mineral or geothermal resources.

Substations

The construction and operation of the proposed substation improvements would have no impact on mineral resources.

4.11.5 SCE PROPOSED MEASURES

The Proposed Project would have no impact on mineral resources. SCE does not propose any additional measures to protect mineral resources.

4.11.6 MITIGATION MEASURES

Impacts to mineral resources would be less than significant, and therefore, no mitigation is required.

4.11.7 ALTERNATIVES

The impact comparison Table 4.11-1 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.11-1: Mineral Resource Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Would not cross known areas of mineral resource	No additional impact	Equal Impact	Same as Proposed Route
C-2	Would not cross known areas of mineral resource	No additional impact	Equal Impact	Same as Proposed Route
C-5	Would not cross known areas of mineral resource	Construction of the Proposed Subtransmission Line along this segment would avoid areas being actively used and planned for future mining	Less Impact	Same as Proposed Route
C-7	Would not cross known areas of mineral resource	No additional impact	Equal Impact	Same as Proposed Route
W-2	Would not encounter known areas of cross resource	No additional impact	Equal Impact	Same as Proposed Route
W-5	Would cross an area designated MRZ-2 and known to contain mineral resource, and this area is currently being developed for residential uses	Construction of the Proposed Subtransmission Line along this alternative segment could adversely affect the availability of known mineral resources over the 0.75 acres that would include the pole locations, impacts would be less than significant	Greater Impact	Same as Proposed Route

4.11.8 REFERENCES

CDOC (California Department of Conservation). 1987. Mineral Land Classification of the Greater Los Angeles Area. Special Report 143, Part V, Classification of Sand and Gravel Resource Areas Saugus-Newhall and Palmdale Production-Consumption Regions.

City of Lake Elsinore. 1990. City of Lake Elsinore General Plan. Land Use Element.

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County of Riverside. 2003. Riverside County General Plan. Land Use Element. Adopted October 7, 2003.

County of Riverside. 2005. Permitted Surface Mines in Riverside County. Website: http://www.tlma.co.riverside.ca.us/mining/permitlist4.shtml. Accessed July 2005.

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4.12 Noise and Vibration

4.12.1 ENVIRONMENTAL SETTING

General Noise Information

Noise is generally defined as unwanted or objectionable sound, and airborne sound can be described as a rapid fluctuation of air pressure above and below the atmospheric pressure. Most sounds that humans hear in the environment consist of a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a filter that reflects the fact that human hearing is less sensitive at low and extreme high frequencies compared to mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA).

Expressed on a logarithmic (power of 10) scale the units are depicted as dBA using a frequency-weighted pattern that duplicates the sensitivity of the human ear. A noise of 70 dBA is approximately twice as loud as a noise of 60 dBA and four times as loud as a noise of 50 dBA. Table 4-12-1 defines acoustical terms used in this PEA.

Since noise levels from various sources vary over time, they are frequently expressed as an equivalent noise level (L_{eq}), which is a computed steady noise level that represents the same energy transmission over a specified time. L_{eq} values are commonly expressed for one-hour periods, but different averaging times may be specified.

For the evaluation of environmental or community noise effects, it is customary to define a 24-hour-long noise level based on hourly L_{ed} values, and to apply an excess or "penalty" noise during the nighttime hours to account for the added nuisance during those periods and to adjust for lower average ambient levels during that period. Depending on the exact penalty scheme, the resulting noise descriptor is either a Community Noise Equivalent Level (CNEL) or a Day-Night Average Noise Level (L_{dn}). The two ways of expressing such noise levels are nearly equivalent, and are often used interchangeably.

Figure 4.12-1 identifies typical noise levels in the environment.

Ground-borne Vibration

Vibrating objects in contact with the ground radiate energy through the ground. Large and/or powerful vibrating objects can be perceptible by humans and animals. The rumbling sound caused by the vibration of room surfaces is called ground-borne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and in the United States is referenced as vibration decibels (VdB) (Caltrans 1998).

The background vibration velocity level in residential and educational areas is usually approximately 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, and 100 VdB, which is the general threshold where minor damage can occur in fragile buildings (Caltrans 1998).

Table 4.12-1: Definition of Acoustical Terms Used in this PEA	
Terms	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure; the reference pressure for air is 20
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network; the A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA $L_{eq\,[h]}$
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels in the night between 10:00 PM and 7:00 AM
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location

SOURCE: Caltrans 1998

Project Study Area

The cities of Lake Elsinore and Perris are relatively small communities with a rural character. Much of the Proposed Subtransmission Line, in addition to traveling through these communities, travels through rural and rural residential areas in unincorporated Riverside County. Ambient noise levels throughout most of the Project Study Area are low as a result of the existing environment. The predominant noise sources in the Lake Elsinore, Perris, Newcomb, and Sun City areas are mobile sources, particularly motor vehicles, and occasionally aircraft. Interstates 15 and 215, Highway 74, and several other arterial roadways would be located in or adjacent to the Proposed Transmission Line Route. General aviation aircraft operations originating from the Perris Airport and Skylark Airport (a private airport in the southeast portion of the City of Lake Elsinore) also contribute to the noise environment. Other sources of noise in the Project Study Area are from non-transportation sources including industrial and commercial operations. The noise environment in the Project Study Area is generally typical of a rural setting, except at locations affected by transportation, recreation, and commercial noise sources.

Subtransmission Line

The proximity of the Proposed Subtransmission Line Route to sensitive receptors is described in Table 4.12-2.

Figure 4.12-1: Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 20 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area night-time		Quiet office environment
	40 dBA	
Suburban night-time		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

SOURCE: Caltrans 1998

Table 4.12-2: Proximity to Sensitive Receptors	
Segment	**Sensitive Receptor Location**
Segment E-1	Less than 300 feet from residences in portions of unincorporated Riverside County east of I-15 Within 300 feet of residences in portions of the City of Perris just west of Murrieta Road and east of Goetz Road before crossing State Highway 74
Segment C-1	Within 300 feet of residential areas within the City of Lake Elsinore near SR-74
Segment C-3	Within 100 feet of residences in unincorporated Riverside County
Segment C-4	Within 200 feet of residences in unincorporated Riverside County
Segment C-6	Crosses I-15, and no sensitive receptors within 1,000 feet
Segment W-1	Within 300 feet of residences at the western end of the segment
Segment W-4	Within 300 feet of residences at Horsethief Canyon Road, approximately 0.25 miles south of I-15
Segment W-8	Would cross I-15, and there are no sensitive receptors within the area of potential impact (1,000 feet)
Segment W-10	Western end of the segment, where it terminates at the Ivyglen Substation, within 300 feet of several residences across Temescal Canyon to the north; a large wall separates the residential area from the roadway, and the area is raised substantially in comparison to the roadway and the substation

Substations

The Valley Substation is located within an area of undeveloped land surrounded by light and heavy industrial development. No sensitive receptors are within 1,000 feet of the substation. The area is designated Light Industrial Use by the County of Riverside (County of Riverside 1990).

The Ivyglen Substation is located just south of Temescal Canyon Road, roughly 800 feet west of I-15 and about 300 feet from several residences. The area is designated Open-Space/Mineral by the County of Riverside (County of Riverside 1990).

Telecommunications Line

The telecommunications line would follow the path of the Proposed Subtransmission Line Route along its entire length and would be located near the same sensitive receptors.

4.12.2 REGULATIONS, PLANS AND STANDARDS

Federal

In 1974, the US EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of* Safety. This document provides information for state and local governments to use in developing their own ambient noise standards. The US EPA, the Federal Aviation Administration, the Federal Highway Administration, and the US Department of Transportation (DOT) have developed guidelines for noise. Under the authority of the Noise Control Act of 1972, the US EPA established noise emission criteria and testing methods, published at 40 CFR Part 204, which apply to interstate rail carriers, and some construction and transportation equipment (portable air compressors, and medium- and heavy-duty trucks).

State

There are no applicable state policies or regulations that apply to the Proposed Project. California does not regulate stationary noise sources, such as electric transmission lines and substations. Noise regulation and enforcement responsibilities are conveyed to counties and cities through a variety of police powers such as general plans and noise ordinances.

Regional and Local

County of Riverside

Most of the Proposed Project would be located in areas under the jurisdiction of Riverside County. Both substations are located in Riverside County and all Proposed Subtransmission Line segments have portions that traverse Riverside County lands, with the exception of Segment C-6, which is entirely within the City of Lake Elsinore.

The County regulates noise through the County Code, Title 15.04.020. The code does not set construction noise limits, but does restrict construction activities within 0.25 miles of an occupied residence (property line) to the hours of 6:00 a.m. to 6:00 p.m. during the months of June through September, and from 7:00 a.m. to 6:00 p.m. during the months of October through May (County of Riverside 2003).

Operational noise levels are regulated by the Riverside County Department of Industrial Hygiene to limit the level of noise from industrial and other stationary source operations. Worst-case scenario levels for stationary noise sources projected to the property line of an occupied residential property are to remain below 45 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.) and are not to exceed 65 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) (Riverside County 2004).

Sensitive receptors, such as rest homes, schools, hospitals, mental care facilities, places of worship, and libraries, are described in the Riverside County General Plan. Noise generating uses that result in noise levels greater than 65 dBA are discouraged near these areas of increased sensitivity.

City of Lake Elsinore

Portions of the Proposed Subtransmission Line would traverse lands within the incorporated City of Lake Elsinore. Zoning Code Chapter 17.78, "Noise Control" prohibits construction on weekdays between the hours of 7 p.m. and 7 a.m. or at any time on weekends or holidays. The code also states that, "where technically and economically feasible," construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in Table 4.12-3.

The City of Lake Elsinore General Plan (1990) defines noise sensitive land uses to include residences of all types, hospitals, rest homes, places of worship, and schools. An exterior standard of 60 L_{dn} is recommended in order to preserve the rural, natural, and desired environment of Lake Elsinore. The City General Plan also discourages residential development in areas with background noise greater than 65 L_{dn}.

City of Perris

Section 7.34.060 of the Perris General Plan restricts construction noise to 80 dBA at residential property lines, restricts construction to the hours of 7 a.m. to 7 p.m., and prohibits construction on holidays.

Table 4.12-3: Cities of Lake Elsinore and Perris Construction Noise Standards

Type of Equipment	Maximum Noise Levels at Affected Properties (dBA)				
	City of Perris	City of Lake Elsinore			
	All Residential	Single-Family	Multi-Family	Semi-Residential/ Commercial	Business Properties
	Daily, except Sundays and legal holidays, 7 a.m. to 7 p.m.				*All days, all hours*
Mobile Equipment- Non-scheduled, short-term operation (less than 10 days) of mobile equipment	80	75	80	85	85
Stationary Equipment- Repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment	80	60	65	70	75

SOURCE: City of Lake Elsinore 1990 and City of Perris 2005

4.12.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Expose persons to or cause generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Expose persons to or cause generation of excessive ground-borne vibration or ground-borne noise levels
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project Area to excessive noise levels
- For a project within the vicinity of a private airstrip, expose people residing or working in the Project Area to excessive noise levels

4.12.4 IMPACTS ANALYSIS

Impact Summary

Noise and vibration impacts associated with the Proposed Project would be the result of short-term construction impacts. Typical project construction would not cause significant noise impacts. Residents would experience significant noise level for brief periods of time during construction.

Construction Impacts

Sensitive Receptors

The potential for and degree of noise and vibration impacts are related to the proximity of sensitive receptors and land uses. Sensitive receptors would include residences, schools, hospitals, parks, and similar areas where peace and quiet is generally expected. Each segment and portion of the Project Study Area would be subject to the use of heavy equipment to transport material to construction sites. Noise from truck traffic would be within ambient noise levels and would not be significant.

Noise Impacts

Equipment operation would be the primary noise and vibration source associated with construction activities of the Proposed Subtransmission Line and telecommunications line. The transport and installation of subtransmission line poles, conductors, and electrical tie-ins would require the use of heavy equipment. Grading would also be required for creating staging areas, foundation pads, conductor pull areas, spur roads, and for improving access along roads and trails that have not been maintained. Noise levels resulting from construction are dependent on several factors including the number and type of equipment operating, the level of operation, and the distance between sources and sound and vibration receptors. Heavy construction equipment typically generates noise levels up to approximately 95 dBA at 50 feet. This noise level is common with heavy construction. Noise intensity is dissipated with distance. Generally, air borne noise decreases by 6 dBA with each doubling of distance (Bolt et al 1971). Noise levels at the closest sensitive receptors (100 feet) would be approximately 89 dBA and would be within the maximum daily noise levels for all jurisdictions at a distance of approximately 500 feet. Typical subtransmission line construction equipment noise level estimates are provided in Table 4.12-4. The specific noise and vibration impacts caused by construction activities are discussed further below.

Grading would be required throughout the Project Study Area for the Proposed Subtransmission Line construction activities. Cranes and other heavy equipment would be used to erect poles and for installing conductors. Table 4.12-5 shows typical noise levels at construction sites.

Subtransmission Line. Areas that would be subject to noise impacts are listed in Table 4.12-6.

Residents and other sensitive receptors closer to subtransmission line construction could be subjected to intermittent construction noise levels that could be considered significant if left unmitigated. Construction at any pole site would not be sustained for more than a few days and would last no more than ten hours per day. Average construction noise levels would cause significant noise impacts at distances less than 200 feet. Heavy construction equipment typically does not operate continuously in one position all day long, which would reduce the impacts to sensitive receptors. SCE Proposed Measures are intended to minimize the short-term significant noise effects. Impacts to residents located closer than 200 feet are potentially significant. Residents and sensitive receptors located at a distance greater than 200 feet would not experience significant impacts during typical construction activities. Residences located directly adjacent to the construction would experience significant noise impacts from subtransmission line construction. Mitigation measures presented in Section 4.12-5 would reduce the impacts of construction noise on nearby residences.

Substations. The Valley Substation is not located in proximity to any sensitive receptors. There would be no significant noise or vibration impacts associated with the modifications at the Valley Substation. All noise from work done at the substation would be sufficiently attenuated by distance, and no work would be conducted at night. The noise impacts from construction activities at the Valley Substation would not be significant.

Table 4.12-4: Estimated dBA from Typical Transmission Construction Equipment

Construction Equipment	Typical Estimated Sound Level dBA at 100 feet (Closest Sensitive Receptor)
Crane, Derrick	82
Ford F-550 Flatbed Truck	82
Backhoe	79
Crane, Mobile	77
15-Ton Crane	77
Concrete Pump	76
623 Scraper	75
CAT 14 Blade	75
Ditch Witch R-40 Trencher	75
Air Compressor	75
Bulldozer	74
Concrete Mix Truck	73
CAT 300 Excavator	72
Concrete Vibrator	70
CAT TH-105 Forklift	69
New Holland 545 Skip Loader	69
JD 310 Skip Loader	69
Excavator w/ Pulverizer	68
10-Wheel Dump Truck	68
CAT 950 Loader	65
185-CFM Compressor	64
CAT 973 Track Loader	63
25 KW Generator	63
150-Ton Mobile Crane	61
Pickup Truck	49

SOURCE: Bolt, Beranek and Newman 1971

Table 4.12-5: Typical Noise Levels at Construction Sites

Construction Phase	Average Noise Level at 50 Feet	
	Minimum Required Off-road Equipment	All Pertinent Equipment On-site
Clearing	84 dBA	84 dBA
Excavation	78 dBA	88 dBA
Paving	78 dBA	79 dBA

SOURCE: Bolt, Beranek and Newman, 1971 and MHA 2006

Table 4.12-6: Areas of Potential Temporary Noise Impacts to Sensitive Receptors

Segment	Type of Sensitive Receptors	Location	Jurisdiction	Approximate Distance from Noise Source to Closest Receptor	Highest Expected Noise Levels (unmitigated) dBA
E-1	Residences	At Trumble Road	Perris	300 Feet	80
	Residences	Between Murrietta Road and Goetz Road	Riverside County	300 Feet	80
C-1	Residences	Along the entirety of the route as it passes along SR-74	Lake Elsinore and Riverside County	300 Feet	80
C-3	Residences	Along the entirety of the route	Riverside County	100 Feet	89
C-4	Residences	The central and eastern portion of the segment along Nichols Road	Riverside County	100 Feet	89
W-4	Residences	At the crossing of Horsethief Canyon Road	Riverside County	300 Feet	80
	Residences/Recreation	At the crossing of Glen Ivy Road near the Glen Ivy Sun Club	Riverside County	1000 Feet	69
W-10	Residences	Near the Ivyglen Substation at the western terminus	Riverside County	300 Feet	80

SOURCE: MHA 2006

The Ivyglen Substation is located 300 feet south of a residential area. This is the closest sensitive receptor. The residential area is surrounded by a large wall that extends above the level of the substation. Noise levels for construction at the substation are expected to be around 85 dBA at 50 feet, and would be around 70 dBA at 300 feet. The Ivyglen Substation is located in unincorporated Riverside County, which does not specify construction noise standards. Noise levels from installing equipment would be temporary and would not be considered significant.

Telecommunications Line. Construction would require large trucks, but would not use equipment that produces noise levels substantially above those deemed acceptable by the local city noise standards defined for construction. Most construction would be accomplished with a bucket truck and several crew trucks. The telecommunications line would be installed on the new Subtransmission Line poles once erected. Some sections of the telecommunications line would be buried using a backhoe, which would create noise levels of 85 dBA at 50 feet. Residences would be located approximately 300 feet from the underground construction activities at the Ivyglen Substation, where noise levels would be approximately 70 dBA. All work would be done during the daytime hours and would be temporary. Construction of the telecommunications line would not cause significant noise impacts.

Vibration

Subtransmission Line. Construction of the Subtransmission Line would require the use of an air tamp to compact ground around the poles when they are erected. Vibration created from the air tamp would dissipate quickly and would not create impacts to sensitive receptors further than 50 feet from the area being compacted. Pole sites would not be located within 50 feet of any sensitive receptors. Vibration would cause no impact.

Substations. Modifications at both substations would cause only very minor vibration and would not be noticeable beyond the substation boundaries. There would be no impact.

Telecommunications Line. Underground construction of the telecommunications line would cause small amounts of ground-borne vibration. Telecommunications line construction would not be located within 50 feet of sensitive receptors at underground locations. There would be no impact from telecommunications construction.

Ambient Noise

Subtransmission Line. Construction noise resulting from construction of the Subtransmission Line would cause sporadic noise during daytime hours. Periods of construction in a specific location would not typically exceed ten days and thus would not create a long-term increase in ambient noise levels along any of the Proposed Subtransmission Line Route.

Substations. Substation modification activities would last no more than 25 days and would not create a significant increase in ambient noise levels. Equipment installation may require the use of cranes and trucks to transport equipment to the site. Construction would occur during daylight hours at both substation locations.

The Valley Substation is not located within 1,000 feet of any sensitive receptors. The substation is located in unincorporated Riverside County. Riverside County does not set daytime noise construction standards. All work at the substation would be done during daytime hours and thus would not cause significant impacts to ambient noise levels in the area.

The Ivyglen Substation is located in Riverside County. Riverside County does not set daytime noise construction standards. All work at the substation would be done during daytime hours and thus would not cause significant impacts to ambient noise levels in the area.

Airports and Airstrips

Subtransmission Line and Telecommunications Line. Perris Valley Airport is a privately-owned, public-use airport located near the corner of Ethanac Road and Goetz Road in Perris. This facility provides a 5,100-foot long runway, and handles approximately 68 aircraft operations per day. The airport serves as home to ultralight plane rides and the Perris Valley Skydiving Company (City of Perris 2004). It is located approximately 1.1 mile north of the Proposed Subtransmission Line Route.

Skylark Airport is located within the City of Lake Elsinore, in the vicinity of the southern terminus of Lake Elsinore. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface of Skylark Airport consists of gravel and sand. As such, this surface generally does not permit optimal conditions for frequent and convenient airport operations (City of Lake Elsinore 2006). Skylark Airport is located 4.9 miles from the Proposed Subtransmission Line Route..

The Proposed Subtransmission Line Route is not located in close proximity to either of the airports. Only small recreational airplanes generating comparatively low levels of noise utilize the airports. The Proposed Subtransmission Line would not subject those working on the Proposed Subtransmission Line to significant levels of noise or vibration from air traffic or airport related noise.

Substations. The existing substations are not located in close proximity to the airports.

Operational Impacts

Once the Proposed Subtransmission Line poles are erected and the conductors installed, noise generation would not be significant. The proposed modifications at the existing Valley and Ivyglen substations would not be expected to result in any long-term, operational phase noise effects on sensitive receptors. The potential for noise would come from two sources: electrical and related equipment at the substations, and corona discharge and similar phenomena associated with the Proposed Subtransmission Line. There would be no operational noise impacts associated with the telecommunications line.

Noise and Vibration

Subtransmission Line. The noise from corona discharge and similar electrical phenomena associated with high voltage lines is heard as a crackling or hissing sound, which commonly varies with the humidity. While distinctive, this noise is typically only about 40 to 50 dBA, or less, near the edge of 500 kV lines (SCE 2005). The Proposed Subtransmission Lines would be 115 kV and would create substantially less noise. The noise from such electrical discharge would be less than significant.

Maintenance on the lines may create short-term increases in noise to sensitive receptors located in the immediate vicinity. Maintenance would be rare, intermittent, and short-term. Noise impacts from maintenance on the lines would not be significant.

Substations. Noise from transformers and similar equipment at substations is usually a low frequency (60 Hz) humming sound. Noise from fans or ventilation equipment on buildings may be added to this sound. These types of noises commonly range from approximately 50 to 60 dBA at distances of 100 feet. The resulting exterior noise levels are well below the County and/or City noise standard of 65 dBA at the closest sensitive receptors. The proposed modifications at the substations would not result in significant increases in noise generation at the substations. Potentially significant noise impacts from substations are usually limited to residences located immediately adjacent to them. There are no residences located immediately adjacent to either of the substations.

Maintenance at the substation would not create significant levels of noise. Typical maintenance would consist of one or two trucks visiting the substation once a week to perform routine checks of the equipment.

Personnel on site would perform all maintenance at the site and would not cause a significant noise impact.

Telecommunications Line. Operation and maintenance of the telecommunications line would not create noise or vibration. Maintenance would likely require the use of one or two trucks and noise levels would not be significant.

4.12.5 SCE PROPOSED MEASURES

SCE would employ the following noise-suppression techniques to minimize temporary construction noise and avoid possible violations of local rules, standards, and ordinances:

> **NOISE-SCE-1:** Construction shall be restricted to daytime, weekday hours or an alternative schedule established by the local jurisdiction to the extent feasible.
>
> **NOISE-SCE-2:** Construction equipment shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

NOISE-SCE-3: Construction traffic shall be routed away from residences and schools, where feasible.

NOISE-SCE-4: Unnecessary construction vehicle use and idling time shall be minimized to the extent feasible. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. A "common sense" approach to vehicle use shall be applied; if a vehicle is not required for use immediately or continuously for construction activities, its engine should be shut off. (Note: certain equipment, such as large diesel-powered vehicles, require extended idling for warm-up and repetitive construction tasks.)

4.12.6 MITIGATION MEASURES

NOISE-MM-1: SCE will notify all receptors within 500 feet of construction of the potential to experience significant noise levels during construction.

NOISE-MM-2: During construction SCE will use sound walls, noise-reduction blankets, or other noise reduction measures prior to developing the project site in areas where sensitive receptors would be subjected to significant noise impacts.

4.12.7 ALTERNATIVES

Construction, operation, and maintenance for the alternative line segment would have similar noise impacts as the Proposed Subtransmission Line Route. The construction of alternatives would be identical in methodology. Impacts resulting from construction of the segments would differ from the Proposed Subtransmission Line Route based on their proximity to sensitive receptors. Areas where the potential for noise impacts to sensitive receptors are listed in the Table 4.12-7.

Ambient noise levels would also be a function of the distance of the alternative line segment to sensitive receptors. Ambient noise levels would not cause a significant effect for any of the alternative segments.

The impact comparison in Table 4.12-7 identifies the alternative route segments the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are addition SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.12-7: Areas of Potential Noise or Vibration Impacts to Sensitive Receptors

Alternative Segment	Setting/Location	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	At Trumble Road 300 to 1,000 feet from residences	Could cause noise impacts to residences during construction, impacts could be significant	Equal Impact	Same as Proposed Route
	Along much of Highway 74 1,000 feet from residences	Could cause noise impacts to residences during construction, impacts would be significant	Equal Impact	Same as Proposed Route
C-2	Along much of Highway 74 1,000 feet from residences	Could cause noise impacts to residences during construction, impacts would not be significant	Equal Impact	Same as Proposed Route

Table 4.12-7 *(Continued)*: Areas of Potential Noise or Vibration Impacts to Sensitive Receptors				
Alternative Segment	**Setting/Location**	**Impact**	**Compared to Proposed Project**	**SCE Proposed Measures/ Mitigation Measures**
C-7	Follows Highway 74 into urban portions of Lake Elsinore	Could cause noise impacts to residences during construction, noise impacts could be significant	Equal Impact	Same as Proposed Route
W-2	Would be routed on a hillside north of I-15	Would not be near sensitive receptors, no impact	Less Impact	Same as Proposed Route
W-3	Crosses I-15	Would not be near sensitive receptors, no impact	Equal Impact	Same as Proposed Route
W-5	The segment runs parallel to I-15 , approximately 0.25 miles south	Would not be near sensitive receptors, no impact	Equal Impact	Same as Proposed Route

4.12.8 REFERENCES

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4.13 Population and Housing

4.13.1 ENVIRONMENTAL SETTING

The Cities of Lake Elsinore and Perris and the rural unincorporated areas of Riverside County near the Proposed Subtransmission Line are growing and are projected to continue growing both in population and housing. The Southern California Association of Governments (SCAG) evaluates and makes projections of population and housing growth based on US Census data.

Population

The 2000 US Census reported that the population of Riverside County was 1,545,387. This includes a population of 28,928 in the City of Lake Elsinore, and 21,460 residents in the City of Perris (US Census Bureau 2006). SCAG projects that the current growth will continue at a strong rate throughout the County, especially in the incorporated areas (SCAG, 2006). The recent and projected growth of these areas is summarized below in Tables 4.13-1 and 4.13-2.

Table 4.13-1: Project Study Area Population and Projections

	1990 Census	2000 Census	2010 Projection	2020 Projection
Lake Elsinore	18,285	28,928	42,940	57,842
Perris	21,460	36,189	63,440	76,501
Riverside County	1,170,413	1,545,387	2,085,432	2,644,278

SOURCE: US Census Bureau 2006 and SCAG 2006

Table 4.13-2: Project Study Area Population Growth 1990-2000

	1990-2000	Percent
Lake Elsinore	10,643	58.2%
Perris	14,729	68.6%
Riverside County	374,974	32.0%

SOURCE: US Census Bureau 2006, SCAG 2006, and MHA 2006

Housing

The 2000 US Census indicated that Riverside County had 506,218 households, which is a 25% increase from 1990. The increase is higher within the incorporated areas of the County, with 45% and 43% increases in Lake Elsinore and Perris, respectively. Over 91% of the housing units are occupied in the cities. Over 86% of housing units are occupied in the county as a whole. Table 4.13-3 summarizes the measured and projected numbers of households between 1990 and 2020.

Based on the Census data for 1990 and 2000, the percent growth of population has outpaced the growth of housing. Housing unit growth from 1990 to 2000 was approximately a 20% increase in the County, and approximately 36% in Lake Elsinore and Perris.

Table 4.13-3: Project Study Area Households and Projections				
	1990 Census	**2000 Census**	**2010 Projection**	**2020 Projection**
Lake Elsinore	6,066	8,817	12,703	17,386
Perris	6,726	9,652	16,605	20,499
Riverside County	402,067	506,218	685,775	907,932

SOURCE: US Census Bureau 2006 and SCAG 2006

4.13.2 REGULATIONS, PLANS AND STANDARDS

Federal

There are no federal regulations applicable to the Proposed Project.

State

There are no state regulations applicable to the Proposed Project.

Regional and Local

The Housing Element is one of the seven General Plan elements mandated by the State of California, as articulated in Section 65580 and 65589.8 of the Government Code. Each city and county is required to discuss how they will meet their fair share of the housing need in the state.

County of Riverside

The Riverside County General Plan Housing Element includes a discussion of programs for providing housing, but no specific policies or regulations that are applicable to the Proposed Subtransmission Line. There is a relevant policy in the Land Use Element. To support future growth of the population and housing stock of Riverside County the Land Use Element contains policies to ensure adequate utilities for new development (County of Riverside 2003):

> **LU 1.6:** Coordinate with local agencies, such as Local Agency Formation Commission (LAFCo), service providers and utilities, to ensure adequate service provision for new development (AI 4).

City of Lake Elsinore

The City of Lake Elsinore has no housing or population regulations applicable to the Proposed Subtransmission Line.

City of Perris

The City of Perris has no housing or population regulations applicable to the Proposed Subtransmission Line.

4.13.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Induce substantial population growth in the area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere

4.13.4 IMPACT ANALYSIS

Impact Summary

The construction and operation of the Proposed Project would not displace any people or housing. The Proposed Subtransmission Line was designed to meet the projected needs of planned development, and therefore, would not induce substantial population growth in the area, either directly or indirectly. The Proposed Subtransmission Line and telecommunications line would not displace housing or have a significant negative impact on population or housing. Proposed improvements to the Valley and Ivyglen substations would not have any impact on population or housing as they are contained within the existing substations.

Construction Impacts

Population Growth

Subtransmission Line and Telecommunications Line. Demand for electricity is a result, not a cause, of development in the region. Therefore, the Proposed Subtransmission Line and telecommunications line would not cause a significant impact due to induced population growth in the area.

Substation. The proposed improvements to the substations would not cause a significant impact due to induced population growth.

Displacement of Existing Housing

Subtransmission Line and Telecommunications Line. The Proposed Subtransmission Line and telecommunications line would be located primarily within or along existing roads, SCE distribution lines, and/or SCE ROWs. In those locations where a ROW is not currently held by SCE, the location of the Proposed Subtransmission Line and telecommunications line would not displace existing housing units or necessitate the construction of replacement housing elsewhere.

Substation. The proposed improvements to the substations would be constructed within the existing boundaries of the substations and would not displace existing housing, and therefore, would not cause a significant impact due to displacement of existing housing.

Displacement of Residents

Subtransmission Line and Telecommunications Line. As stated above, the Proposed Subtransmission Line and telecommunications line would be located primarily along or within existing roads, SCE distribution lines, and/or SCE ROWs. In those locations where a ROW is not currently held by SCE the location of the Proposed Subtransmission Line and telecommunications line would not displace substantial numbers of people.

Substation. The proposed improvements to the substations would not cause a significant impact due to displacement of existing housing.

Operational Impacts

The Proposed Subtransmission Line and telecommunications line would be unmanned and the additional electrical equipment within the substations would require no additional personnel. Routine maintenance would include equipment testing, equipment monitoring and repair, as well as emergency and routine procedures for service continuity and preventative maintenance. The Proposed Project would have no impact due to the displacement of housing or people by operation or maintenance.

4.13.5 SCE PROPOSED MEASURES

The Proposed Project would have no impact on population or housing. SCE does not propose any additional measures.

4.13.6 MITIGATION MEASURES

The Proposed Project would have no impact on population or housing, therefore, no mitigation measures are required.

4.13.7 ALTERNATIVES

The impact comparison Table 4.13-4 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.13-4: Population and Housing Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Would cross through more of the City of Perris and away from existing SCE ROW.	New ROWs would be needed but would be located so as to not cause the loss of some housing or relocation of occupants.	Equal Impact	Same as Proposed Route.
C-2	Would be located farther to the west of Highway 74 and would cross lands currently used for housing.	Would displace some housing.	Greater Impact	Compliance with the Federal Relocation Act.
C-7	Would be located on the east side of Highway 74 for one mile from Ethanac Road to Peach Street and would stay within the Caltrans ROW	No change.	Equal Impact	Same as Proposed Route.
W-2	Located on the north side of I-15, which is a primarily rural undeveloped land.	Less impact on the City of Lake Elsinore and planned development on the south side of I-15.	Equal Impact	Same as Proposed Route.

Table 4.13-4 *(Continued)*: Population and Housing Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
W-3	Would cross I-15.	No change.	Equal Impact	Same as Proposed Route.
W-5	Would cross through more of the new residential development just southeast of Glen Ivy and on the opposite side of I-15 from the existing SCE ROW.	New ROWs would be needed but would be located so as to not cause the loss of some housing or relocation of occupants.	Equal Impact	Same as Proposed Route.

4.13.8 REFERENCES

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4.14 Public Services

4.14.1 ENVIRONMENTAL SETTING

Fire Protection

The California Department of Forestry and Fire Protection (CDF) provides fire protection services to the entire Project Study Area, including unincorporated Riverside County, through administration of the Riverside County Fire Department (RCOFD).

The City of Perris contracted with the Riverside County Fire Department for fire and emergency services in 1983. Perris has a population of over 40,000 and encompasses nearly 30 square miles (City of Perris 2006). The City of Perris has eight firefighters assigned to one fire station at 210 West San Jacinto Avenue (RCOFD 2004).

The City of Lake Elsinore has a population of 38,045 and encompasses 38 square miles (City of Lake Elsinore 2006b). Battalion 2 of the Southwest Division of RCOFD services the City of Lake Elsinore. There are two fire stations located within the City limits, one at 410 West Graham Avenue and the other at 85 McVicker Park. There are 18 firefighters assigned to these two stations (RCOFD 2004).

Law Enforcement

Law enforcement to the Project Study Area is provided primarily through the Riverside County Sheriff's Department. The Cities of Perris and Lake Elsinore also contract with the County Sheriff's Department for municipal police services. The California Highway Patrol, with additional support from the Sheriff's Department, provides traffic enforcement for Riverside County in the Project Study Area.

The Riverside County Sheriff's Office has provided the City of Perris with police services since 1996. One Captain commands the Perris Station at 403 E. 4th Street. The Perris Sheriff's Station also serves the City of Canyon Lake, as well as unincorporated areas of Glen Valley, Mead Valley, Woodcrest, Romoland, and Sun City.

The Lake Elsinore Sheriff's Station is located at 333 Limited Avenue. The station also serves the communities of Alberhill, El Cariso, Glen Eden, Glen Ivy Hot Springs, Good Hope Lakeland Village, Quail Valley, Sedco Hills, and Wildomar.

Public Schools

The Lake Elsinore Unified School District, Perris Unified School District, and Perris Union High School District are the three school districts within the Project Study Area.

The Lake Elsinore Unified School District covers a 140 square mile area with a population of approximately 70,000. The District currently operates 22 schools and programs:

- 13 elementary
- 4 middle
- 2 comprehensive high schools
- 1 continuation school
- 1 alternative education center
- 1 adult education program

The public schools nearest the Project Study Area are Railroad Canyon Elementary School at 1300 Mill Street, Lake Elsinore Head Start at 411 Heal Street, and Valley Adult School at 528 Chaney Street (adjacent to the Tri-Valley Community Day School). The Elsinore Elementary School is located approximately 2.5 miles from the Project Study Area at 52 West Sumner Avenue, and Machado Elementary School is located 1.6 miles southwest of the Project Study Area.

There are 18 public schools within the City of Perris operated by the Perris Unified School District and the Perris Union High School District. Schools in Perris are not within the Project Study Area. Most are located three to five miles north of the Proposed Subtransmission Line; only three are within two miles of the Proposed Subtransmission Line and/or substations (Table 4.14-1).

Table 4.14-1: Schools within 2 miles of the Subtransmission Line and Substations

School	Address	Distance (miles)
Machado Elementary School	15150 Joy Street	1.6
Tuscany Hills Elementary	23 Pointe Russo Street	1.95
Pinacate Middle School	1990 South A Street	1.72

Healthcare Facilities

The closest hospital facility to Lake Elsinore is the Inland Valley Regional Hospital in Murrieta. The hospital serves southwest Riverside County as the region's only trauma center, providing emergency medical services, trauma surgery, intensive care, diagnostic imaging, and rehabilitation.

The City of Perris has two hospitals, Valley Plaza Doctors' Hospital, a 41-bed facility, at 2224 Medical Center Drive, and Christian Hospital Medical Center, a 38-bed facility, at 2224 Ruby Avenue.

Parks and Recreational Facilities

Developed parks that provide for active and passive recreational pursuits are located within the cities of Perris and Lake Elsinore. The City of Perris has nine parks totaling approximately 62 acres and three recreational activity facilities. Lake Elsinore has twelve parks (93.5 acres) and nine youth athletic fields (City of Perris 2005).

4.14.2 REGULATIONS, PLANS, AND STANDARDS

Federal

There are no federal public services regulations applicable to the Proposed Project.

State

California Fire Code, Section 902.2.2.1

California Fire Code, Section 902.2.2.1 requires fire apparatus access roads to have a minimum unobstructed width of 20 feet. Other local regulations are related to health, fire, and building safety. These other regulations include the California Health Code, the California Fire Code, and the Uniform Building Code (UBC), which are implemented at the local level by ordinances adopted by Riverside County.

Regional and Local

The Proposed Subtransmission Line lies within the unincorporated areas of Riverside County, and the cities of Perris and Lake Elsinore. The City of Perris General Plan Safety Element outlines specific policies related to man-made or natural disasters (City of Perris 2005). The City of Lake Elsinore has not yet completed their General Plan; therefore, none of the local safety policies are applicable (City of Lake Elsinore 2006a). As a result, there are no expected adverse effects from the Proposed Subtransmission Line.

4.14.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services (fire protection, police protection, schools, parks or other public facilities)

4.14.4 IMPACT ANALYSIS

Impact Summary

The Proposed Project would not significantly affect service ratios, response times, or other objectives for public services in the area. Fire and emergency services and police services would be required to service the Proposed Project and Project Study Area during construction and operation. The effect on these services would be minor and would not be significant. Schools and public parks would not be affected by the Proposed Project.

Construction Impacts

The construction of the Proposed Project could increase the risk of fire from vehicle traffic and construction equipment through the potential for sparks to ignite dry grasses. This would not occur frequently or to a level that would cause a significant adverse effect on the provision of public services and would not cause new construction or alteration of governmental facilities. The improvements to the substations would not significantly increase the risk of fire or increase the need for services. The construction effects of the Proposed Project would be less than significant.

Operational Impacts

Operation of the Proposed Project would require fire and police services. Services could be required in the event of fire or vandalism, which would not be expected to occur on a frequent basis. The effects to service providers would be less than significant.

4.14.5 SCE PROPOSED MEASURES

The Proposed Project would not cause significant effects to public services. SCE does not propose any additional measures.

4.14.6 MITIGATION MEASURES

The Proposed Project would not result in significant impacts to public services; therefore, no mitigation measures are required.

4.14.7 ALTERNATIVES

The impact comparison Table 4.14-2 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between the Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.14-2: Public Services Impact of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/Mitigation Measures
E-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
C-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
C-7	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
W-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
W-3	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
W-5	No significant change	No additional impacts	Equal Impact	Same as Proposed Route

4.14.8 REFERENCES

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4.15 Recreation

4.15.1 ENVIRONMENTAL SETTING

Overview

County of Riverside

The County of Riverside currently maintains 35 regional parks, encompassing approximately 22,317 acres. More than half of these parks are located in the western portion of the County, with other facilities scattered in the desert, mountains, and Colorado River regions. Riverside County also contains four park and recreation districts. These four park districts provide approximately 27 neighborhood and community parks accounting for approximately 275 acres of parkland. Cities within Riverside County currently maintain approximately 215 parks encompassing over 1,534 acres. Parks run by the State of California within Riverside County include Mt. San Jacinto and Lake Perris, both in western Riverside County. The County contains one National Park, Joshua Tree National Park, 794,000 acres of which are in the County of Riverside. (Riverside County 2003).

City of Lake Elsinore

The City of Lake Elsinore included approximately 142 acres of city parklands counted in their General Plan (2006), with an additional 330 acres planned. The City of Lake Elsinore has 11 parks and nine playing fields. The dominant parkland is the Lake Elsinore State Recreation Area. Lake Elsinore is in the City of Lake Elsinore, but the 3,000-acre recreation area is under ownership of the State of California Department of Parks and Recreation. The park includes camping areas, fishing areas and a boat launch. The Proposed Subtransmission Line Route does not cross or impact any parklands within the City of Lake Elsinore.

City of Perris

The City of Perris currently operates 10 parks and two more parks are scheduled to open in 2006. These 12 parks encompass approximately 107 acres, with 100.5 acres devoted to recreational uses (City of Perris 2005).

Project Study Area

Subtransmission Line

Segment E-1 of the Proposed Subtransmission Line would be constructed across the San Jacinto River corridor, which is a riparian corridor that follows over 5.5 miles through the southern portion of Perris. The Proposed Subtransmission Line would cross this corridor as it exits the Valley Substation and runs west along the existing Valley-Serrano 500 kV transmission line right-of-way. The Proposed Subtransmission Line Route does not cross existing parklands or recreation sites within the San Jacinto River Corridor. However, the City of Perris Open Space Element (2006) identifies this corridor as a possible location for park or recreation development in the future. There are no other recreation facilities within the Proposed Subtransmission Line Route.

Substations

Valley Substation. The Valley Substation is located three miles from the nearest urban park (Double Butte Park).

Ivyglen Substation. The Ivyglen Substation is located 1.5 miles from the nearest park in Corona (Citrus Community Park).

Telecommunications Line

The telecommunications line would be integrated on the Proposed Subtransmission Line poles, and placed underground at specific locations. The telecommunications line (including the underground portions) would not cross parks or recreational facilities.

4.15.2 REGULATIONS, PLANS, AND STANDARDS

There are no applicable regulations, plans, or standards for recreation at the federal, state, or local level.

4.15.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated
- Include recreational facilities or require the construction of recreational facilities, which might have an adverse physical effect on the environment

4.15.4 IMPACT ANALYSIS

Impact Summary

Construction, operation, and maintenance of the Proposed Subtransmission Line would have no impact on regional parks or recreational facilities.

Construction Impacts

Parks and Recreational Facilities

The Proposed Project would not result in an increase in the number of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. The Proposed Project would not include recreational facilities or require the construction of recreational facilities that might have an adverse effect on the environment.

Construction of the Proposed Project would have no impact on parks or recreational facilities.

Operational Impacts

The operation and maintenance of the Proposed Project would have no impact on parks or recreational facilities.

4.15.5 SCE PROPOSED MEASURES

The Proposed Project would have no impact on recreation. SCE does not propose any additional measures.

4.15.6 MITIGATION MEASURES

The Proposed Project would have no impact on recreation. No mitigation measures are required.

4.15.7 ALTERNATIVES

The impact comparison Table 4.15-1 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.15-1: Recreation Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	The Subtransmission Line would be 1.6 miles from Bob Long Memorial Park, 1.4 miles from Banta Beatty Park	The Subtransmission Line would be closer to parklands than the Proposed Subtransmission Line Route	Equal Impact	Same as Proposed Route
C-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
C-7	The Subtransmission Line would be 1.7 miles from Kabian County Park	The Subtransmission Line would be .11 miles closer to parklands than the Proposed Subtransmission Line Route	Equal Impact	Same as Proposed Route
W-2	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
W-3	No significant change	No additional impacts	Equal Impact	Same as Proposed Route
W-5	No significant change	No additional impacts	Equal Impact	Same as Proposed Route

4.15.8 REFERENCES

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4.16 Transportation and Traffic

4.16.1 ENVIRONMENTAL SETTING

Highways and Roadways

The transportation system in the Project Study Area and surrounding project region is comprised of Interstate highways, state highways, and Riverside County and Lake Elsinore and Perris local roads. The region is relatively sparsely populated compared to more urban areas located closer to Los Angeles. The region is linked to Los Angeles and Orange Counties principally by Interstate 10 (I-10 or San Bernardino Freeway), Interstate 15 (I-15 or Corona Freeway), and State Route 74 (Highway 74 or Ortega Highway). Interstate 215 (I-215 or Escondido Freeway) provides an eastern bypass to areas northeast of I-15. Below is a description of the major roadways in the project region. Figure 4.16-1 shows the highways and major roadways in the project region.

Interstate 15

I-15 traverses through the City of Lake Elsinore in a generally north-south direction along the east side of Lake Elsinore. To the north, I-15 connects with State Route 91 (SR-91 or Riverside Freeway), State Route 60 (SR-60 or Pomona Freeway), and I-10. I-15 is the main route toward the Inland Empire from the Project Study Area. To the south, I-15 is the link to San Diego County. I-15 is currently three lanes in each direction within the project region.

Interstate 215

I-215 runs north to south through the City of Perris. I-215 is four lanes south of Redlands Avenue in the City of Perris and throughout all areas of the project region (City of Perris 2003).

State Route 74

Highway 74 traverses in a generally east/west direction. Highway 74 heads east from the City of Lake Elsinore and connects with I-215, and is the link to Perris and Hemet. Highway 74 has been widened to a four-lane divided roadway through most of the project region (north of I-15 toward Perris) to accommodate recent development along the area (City of Perris 2005).

Existing Public Transit Systems, Rail, and Air Transport

Fixed-route transit services and demand response (dial-a-ride) transit services are provided by the Riverside Transit Agency (RTA). RTA operates 40 fixed bus routes and demand responsive services within a 2,500-square mile area of western Riverside County. RTA's fixed routes have been designed to establish transportation connections between all cities and unincorporated communities in western Riverside County, including Lake Elsinore and Perris (City of Lake Elsinore 2006).

Park and Ride

The Riverside County Transportation Commission provides free park and ride sites to encourage residents to carpool or use alternative forms of transportation. Several park and ride lots exist within the region (City of Lake Elsinore 2006).

Railroads

There are currently no passenger railroad services within the project region. The Union Pacific (UP) and the Burlington Northern Santa Fe (BNSF) Railroads provide freight service in Riverside County, connecting the County with major markets within California and other destinations north and east. The BNSF line from Riverside traverses the City of Perris along I-215 in the north, and transitions southeast along Case Road. Currently the rail line provides significant goods movement through Riverside to distribution centers north of Perris (City of Perris 2004).

Air Transportation

Perris Valley Airport is a privately owned, public-use airport located near the corner of Ethanac Road and Goetz Road in Perris. This facility provides five,100-foot long runway, and handles approximately 68 aircraft operations per day. The airport serves as home to ultralight plane rides and the Perris Valley Skydiving Company (City of Perris 2004). It is located approximately 1.1 miles north of the Proposed Subtransmission Line Route.

Skylark Airport is located within the City of Lake Elsinore, in the vicinity of the southern terminus of Lake Elsinore. This airport provides glider and skydiving opportunities for the community and surrounding region. The runway surface of Skylark Airport consists of gravel and sand. As such, this surface generally does not include optimal conditions for frequent and convenient airport operations (City of Lake Elsinore 2006). Skylark Airport is located approximately 4.9 miles from the Proposed Subtransmission Line Route.

Project Study Area

Major roadways and arterials in the Project Study Area are described below.

Riverside County

Murrietta Road. Murrietta Road is a two-lane road running north and south on the western side of I-215. It is used primarily as a residential thoroughfare in Riverside County.

City of Lake Elsinore

Central Avenue/Highway 74. Highway 74 turns into Central Avenue/Highway 74 in the City of Lake Elsinore. It is four lanes wide and connects Highway 74 to I-15 and downtown Lake Elsinore. Central Avenue intersects Collier Avenue.

Collier Avenue/Highway 74. Collier Avenue is a four-lane road until it intersects Riverside Drive/Highway 74. Collier Avenue becomes two lanes and continues to I-15 at Nichols Road.

Lake Street. Lake Street from I-15 to Lakeshore Drive is a two-lane undivided roadway. Lake Street is a major access route to northern areas of Lake Elsinore from I-15.

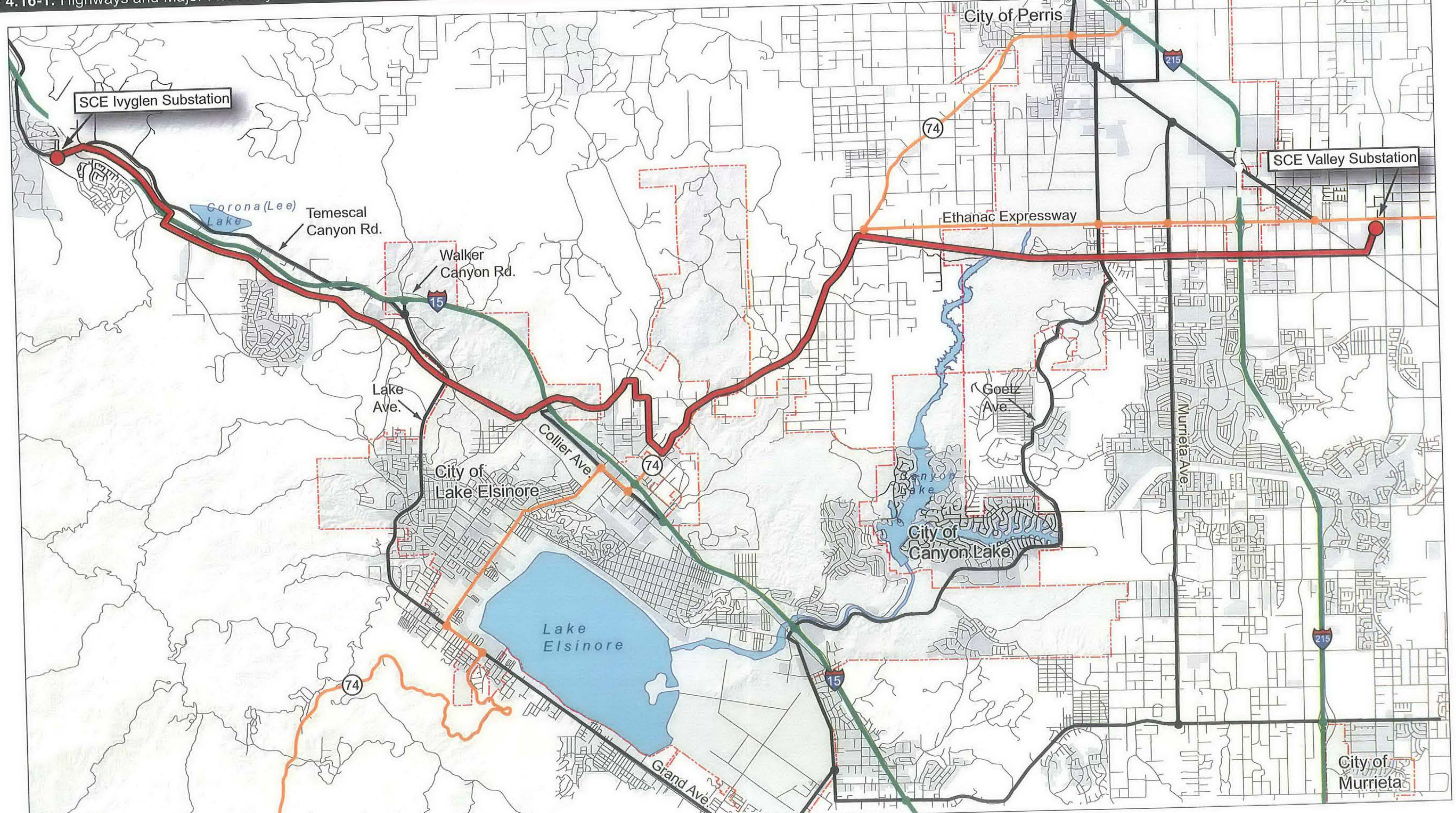
Temescal Canyon Road. Temescal Canyon Road is a two-lane frontage road that roughly follows I-15 as it heads northwest from the City of Lake Elsinore toward the community of Glen Ivy.

City of Perris

Ethanac Road. Ethanac Road is an east-west thoroughfare connecting I-215 to Goetz Road. It is two lanes in the Project Study Area.

Goetz Road. Goetz Road is the northern extension of Railroad Canyon Road. It is two lanes throughout the Project Study Area and connects the City of Lake Elsinore to I-215 and the City of Perris (County of Riverside 2003a).

Figure 4.16-1: Highways and Major Roadways in the Project Study Area



SOURCE: Riverside County TLMA 1989, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Interstate Highway
- State Route
- Major Arterial Route
- Road
- City Boundary
- Substation
- Urban Area
- Water

N W E S

0 0.5 1 2 3 4 Miles

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Table 4.16-1: Street and Intersection LOS Criteria

LOS Level	Description	V/C or ICU[1]
LOS A	LOS "A" conditions are characterized by free flow operations. Vehicles are unimpeded in their ability to maneuver within the traffic stream, and stopped delay at intersections is minimal.	0-0.60
LOS B	LOS "B" conditions are characterized by travel speeds which are within 70% of free flow operational speeds. Vehicles are slightly restricted in their ability to maneuver within the traffic stream, and stopped delay at intersections is not bothersome to most drivers.	0.61-0.70
LOS C	LOS "C" conditions are characterized as stable operations. The ability to maneuver and change lanes is somewhat restricted, and travel speeds may drop to 50% of free flow speeds. Some queuing typically occurs at signalized intersections, however all vehicles clear the intersection on all or nearly all cycles.	0.71-0.80
LOS D	LOS "D" conditions are characterized by high-density traffic flows. Travel speeds may range as low as 40% of free flow operational speeds. Vehicles are restricted in their ability to maneuver within the traffic stream, and one or more vehicles may not clear the intersection within a single signal cycle on a regular basis.	0.81-0.90
LOS E	LOS "E" conditions are characterized as operations at or near capacity. There is little or no freedom to maneuver within the traffic stream. Comfort and convenience levels are low, and driver frustration is generally high. Operations at this level are generally unstable, with even minor disturbances or disruptions resulting in the breakdown of operations and substantially increased delays. The failure of vehicles to clear an intersection in a single cycle is a regular occurrence.	0.91-1.00
LOS F	LOS "F" conditions represent forced breakdown flow. The traffic volume approaching location exceeds the capacity of the system at that location. Intersections often become the focal point for street system failure. Operations are characterized by extensive queues and long delays. Some or all vehicles fail to clear the intersection during every signal cycle.	>1.00

NOTES: [1]V/C is the Volume/Capacity ratio; ICU is the Intersection Capacity Utilization

SOURCE: Transportation Research Board 2006

Table 4.16-2: Proposed Segments and Related Roadway LOS

Segment	Roadway	Relationship	LOS
E-1	I-215 at Ethanac Road	Would cross the roadway on overhead poles approximately 2.1 miles west of the Valley Substation	B
	Murrietta Road at Ethanac	Would cross the roadway on overhead poles approximately 0.25 miles south of Ethanac Road	A
	Goetz Road at Ethanac	Would cross Goetz road on overhead poles approximately 0.25 miles south of Ethanac Road	A
	Highway 74 at Ethanac	Would cross Highway 74 on overhead poles	C
C-1	Highway 74 Ethanac to Conrad Ave	Would run adjacent to the western side of the roadway for approximately 3.5 miles	C
C-3	Residential Roadways	The route would run adjacent and would cross several residential roadways along the segment	N/A
C-6	I-15 at Nichols Road	Would cross I-15	C
W-1	Lake Road	Would cross Lake Road near Coal Road underground	B
W-4	Horsethief Canyon Road	Would cross Horsethief Canyon Road on overhead poles approximately 0.25 miles south of I-15	A
W-8	I-15 at Indian Truck Trail	Would cross I-15 at Indian Truck Trail on overhead poles	C
W-10	I-15 at Temescal Canyon Road	Would cross the roadway at Temescal Canyon Road	C

SOURCE: City of Perris 2005, City of Lake Elsinore 2006, and Caltrans 2006

Level of Service

The majority of the roadways and highways in the Project Study Area operate at Level of Service (LOS) C or better, meaning that motorists on most roadways do not experience substantial delays, even during peak travel hours. Table 4.16-1 identifies LOS criteria. Table 4.16-2 describes the Proposed Project's relationship to local roadways and identifies the LOS of roadways at segment crossings, or where the Proposed Subtransmission Line Route would be located adjacent to major roadways in the Project Study Area.

Truck Routes

The City of Lake Elsinore and the City of Perris both have designated truck routes that are to be utilized for truck transport, except when the delivery of goods or materials makes use of the routes infeasible or impossible (County of Riverside 2005). Truck routes in the area are shown in Figure 4.16-2.

4.16.2 REGULATIONS, PLANS AND STANDARDS

State

Caltrans

The California Department of Transportation (Caltrans) is responsible for the oversight of state highways within California. Caltrans requires that all work done within a state highway ROW receive an encroachment permit from Caltrans. Encroachment permits must also be obtained for transmission lines that span or cross any state roadways.

Congestion Management Plan

A Congestion Management Plan (CMP) was enacted by the state legislature in 1989 to improve traffic congestion in California's urbanized areas. Under the program, regional agencies are designated within each county to prepare and administer the CMP. The agency charged with administering the CMP in Riverside County is the County Transportation Commission. The County Transportation Commission adopted the County's CMP in November 1992 (County of Riverside 2003a). The CMP includes the following roadways within the Project Study Area:

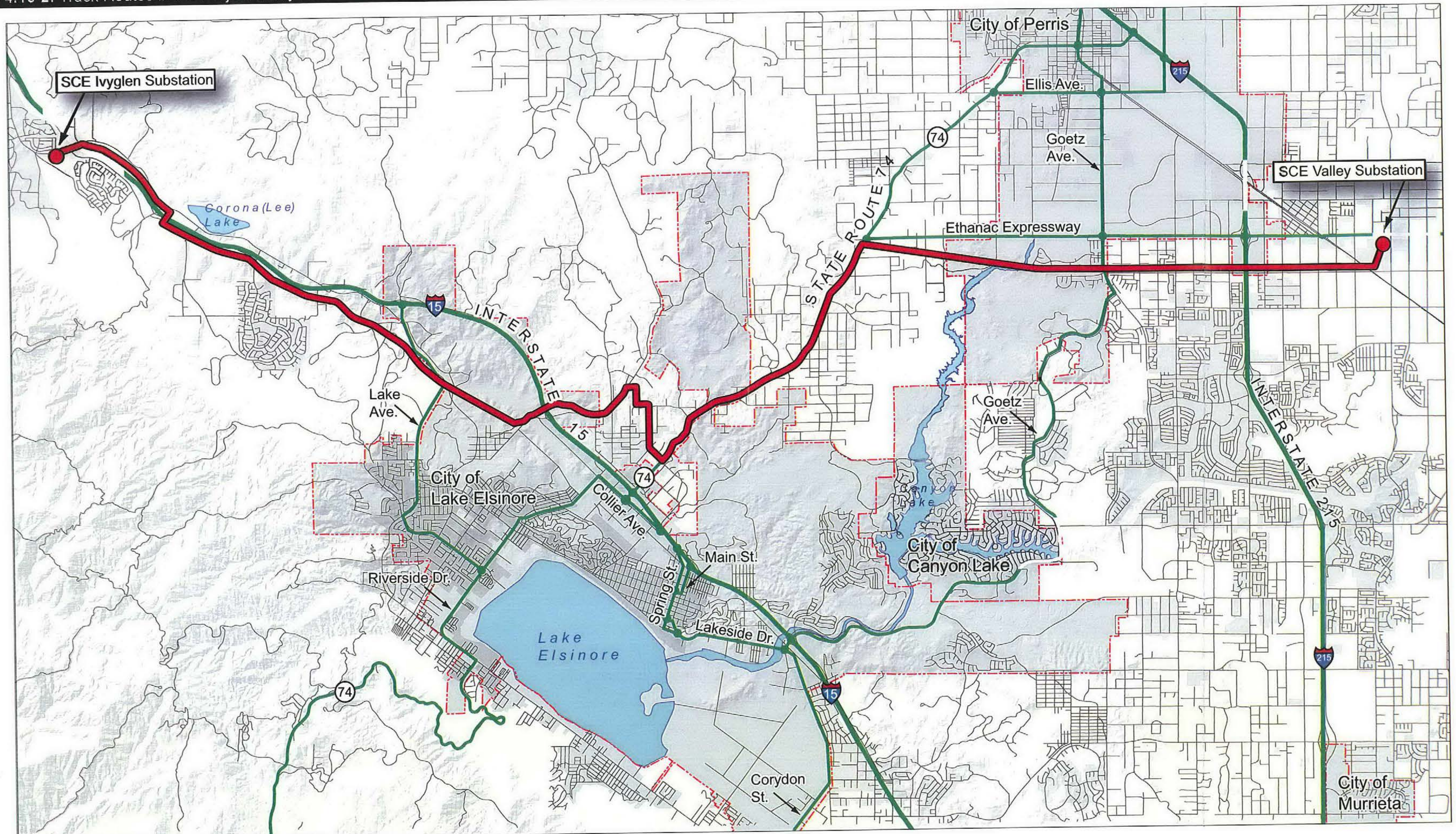
- Interstate 15
- Interstate 215
- Highway 74

The CMP mandates that a biennial assessment of these routes be conducted to assess their LOS and traffic volumes. The three roads included in the Riverside County CMP have retained a constant LOS of C or better in the Project Study Area (County of Riverside 2003a).

Scenic Routes

Caltrans has identified I-15 and Highway 74 as eligible state scenic highways, but neither one is officially designated. Caltrans outlines an application process for official designation that the City of Lake Elsinore has not pursued (City of Lake Elsinore 2006).

Figure 4.16-2: Truck Routes in the Project Study Area



SOURCE: Community Development Department Engineering Division 2001, Southern California Edison 2006, and MHA Environmental Consulting, Inc. 2006

LEGEND

- Proposed Route
- Interstate Highway
- State Route
- Truck Route
- Road
- City Boundary
- Substation
- Urban Area
- Water

N W E S

0 0.5 1 2 3 4 Miles

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Regional and Local

The County of Riverside (2003a), the City of Lake Elsinore (1990), and the City of Perris (2005) General Plans all include a Circulation Element. The Circulation Element is designed to provide a blueprint for construction and maintenance of a transportation network within Riverside County and the respective cities. The road network is based upon development permitted by the Land Use Element in each General Plan, and existing and planned development in the affected areas. The element addresses the County and cities' plans to upgrade streets, arterials, regional bikeways, public transportation, rails service, and air service. The goals, objectives, and policies for circulation are contained in the respective General Plans.

Riverside County

The Riverside County General Plan, Circulation Element (Policy C 3.8) requires all construction projects to restrict heavy-duty truck use in residential and community centers and requires the use of established truck routes whenever possible.

City of Lake Elsinore

The City of Lake Elsinore is currently updating their General Plan and is expected to have several policies related to transportation that would be applicable to the project (City of Lake Elsinore 2006).

City of Perris

Policy V.A. (Implementation measure V.A.4) states that the City of Perris will limit truck traffic in residential and commercial areas to designated truck routes; limit construction, delivery, and truck through-traffic to designated routes; and distribute maps of approved truck routes to City traffic officers.

Policy C2.1.5: Ensure compliance with the County's Congestion Management Plan.

4.16.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Cause an increase in traffic that is substantial in relation to the existing traffic loads and capacity of the street system
- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)
- Result in inadequate emergency access
- Result in inadequate parking capacity
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)

4.16.4 IMPACT ANALYSIS

Impact Summary

The Proposed Project would cause short-term, temporary construction-related impacts where the Proposed Subtransmission Line Route crosses roadways, and where construction would be conducted within a road ROW. Operational impacts would be negligible, as the Proposed Project would require minimal maintenance and would not require more than a few vehicles for operation and maintenance activities.

Construction Impacts

Traffic impacts related to construction of the Proposed Subtransmission Line, substation improvements, and installation of the telecommunications line would be similar in most cases and are discussed together below, except where impacts are specific to a particular component of the Proposed Project. Most potential impacts would be the result of the Proposed Subtransmission Line construction, because it would require the greatest number of workers, and would cross or be located adjacent to several roadways throughout the Proposed Project Route.

Increase in Traffic

Construction of the Proposed Project would result in a temporary, minor increase in traffic volumes on the regional and local roadways that provide access to the construction zones. Traffic would be generated by construction worker commute trips and equipment deliveries. Hauling materials, such as poles, concrete, conductor, excavation spoils, and removed poles, would temporarily increase existing traffic volumes in the Project Study Area.

SCE estimates that the daily workforce would be comprised of 56 workers on a peak day of construction activity if all aspects of the Proposed Project construction occurred simultaneously. It is assumed that the workers would drive to the construction work areas and park personal vehicles at one of the existing SCE substations. Workers would drive or ride in project vehicles to work areas along the Proposed Subtransmission Line Route. Workers would be dispersed throughout the Project Study Area and would not typically all be working at the same place at any one time. Only minimal traffic increases would occur in the Project Study Area. Construction-related truck traffic would also be dispersed throughout the workday. Therefore, construction traffic would not result in a substantial impact on traffic conditions in the Project Study Area. The impacts of construction traffic from up to 56 passenger vehicles would not be significant.

Level of Service

The majority of the intersections in the area at currently rated "A" and "B" with only a few at level "C". The daily workforce of 56 workers during construction is not expected to cause the LOS of any intersections to exceed standards. Therefore, the impact on LOS would be less than significant.

Roadway Closure

Construction of the Proposed Project could result in roadway closures at locations where the construction activities, especially Subtransmission Line stringing, would be located within the ROWs of public streets and highways. Segment E-1 would require Subtransmission Line stringing activity over I-215 and Highway 74. I-15 would be crossed twice (Segments C-6 and W-8). Stringing activities would also occur at several different County and City roadways (see Table 4.16-2). There would be a possibility that roadway closures would be required over transportation routes during line stringing activities. Roadway closures would likely be limited to a few minutes at a time.

SCE would obtain an encroachment permit or similar authorization from the applicable agency with jurisdiction at locations where the construction activities would occur within or above the public road ROW. The encroachment permit would be obtained prior to conducting work within or above a ROW. The specific requirements of the applicable transportation agency may require traffic safety measures at encroachment locations, including detouring all traffic off the roadway at the construction location or implementation of a controlled continuous traffic break while stringing operations are performed. Encroachment permits would also restrict road closures to off-peak periods to avoid excessive traffic congestion, where necessary. The specific agency requirements would be included as stipulations in the required encroachment permits. Compliance with the encroachment permit conditions (such as those measures described above) would ensure that potential impacts associated with short-term road closures are less than significant.

Emergency Response

Construction activities could potentially interfere with emergency response by ambulance, fire, paramedic, and police vehicles at locations where Subtransmission Line stringing activity would occur over I-215 and I-15, and the County and city roads identified in Table 4.16-2. The temporary road and lane closures associated with construction activities could lengthen the response time required for emergency vehicles passing through the construction zone. SCE would accommodate the emergency service provider vehicle by immediately stopping work to allow the passage of the emergency vehicle with minimal delay. Impacts would be less than significant.

Pedestrians and Bicycles

Pedestrian and bicycle circulation could be affected by construction activities, such as pole installation and Subtransmission Line stringing at locations where pedestrians and bicyclists would be unable to pass through the construction zone. This impact could occur in or near residential areas where roads that may be used by pedestrians and/or bicyclists could be temporarily blocked during construction. Roadways would likely be blocked for only a few minutes at a time. In addition, pedestrians and bicyclists would likely be able to take short detours around blocked roads and construction areas. Construction activities would not be expected to impede pedestrian or bicyclist movements in these remote areas where no suitable alternative routes would be available. Impacts would be less than significant.

Damage to Roadways

Heavy trucks and other equipment used during construction activities for the Proposed Project could potentially cause physical damage and/or deterioration of the surface on the roadways that would provide access to the Proposed Project facilities. The impacts would be potentially significant, but reduced to less than significant levels with the implementation of TRANS-SCE-I.

Parking

SCE would provide parking for workers at the Valley and Ivyglen substations. The Proposed Project would not cause significant impacts to parking in the Project Study Area. Workers would be encouraged to carpool to work as specified in SCE Proposed Measures. The Proposed Project is estimated to require a maximum of 56 workers. Impacts to parking would not be a significant impact because of the relatively rural location of the substations, and ample parking at most locations in the cities of Lake Elsinore and Perris.

Operational Impacts

Subtransmission Line, Substations, and Telecommunications Line

Operation and maintenance of the Proposed Project would have negligible impacts on the ground transportation system (roadways and railroads) under normal circumstances because the inspection and maintenance activities would generate only a very small volume of vehicular traffic (one or two trucks).

If a major repair were required at a particular location, the temporary transportation impacts at the repair location would be similar to the construction impacts addressed above. Operational impacts of the Proposed Project would be less than significant.

4.16.5 SCE PROPOSED MEASURES

The SCE Proposed Measures to reduce or eliminate impacts to traffic and transportation have been included as part of the Proposed Project design and SCE's standard construction and operational protocols. With implementation of SCE's Proposed Measures and Mitigation Measure TRANS-MM-1, impacts to transportation and traffic would be less than significant.

TRANS-SCE-1: SCE would coordinate with Caltrans, the County of Riverside Transportation Department, the City of Lake Elsinore, and the City of Perris to schedule construction activities that may affect traffic. SCE will prepare a Traffic Management Plan in consultation with Caltrans, County, and City staff to minimize effects of road crossings and construction adjacent to roads.

TRANS-SCE-2: If lane closures are required, SCE would comply with best management practices established by the Work Area Protection and Traffic Control Manual (California Joint Utility Control Committee 1996). These measures might include the use of cones, flagmen, detours, or performance of construction at night if work requires equipment or personnel operation within the road right-of-way.

TRANS-SCE-3: SCE would limit the number of trips required by encouraging carpooling.

TRANS-SCE-4: Trucks would use designated truck routes whenever possible.

TRANS-SCE-5: SCE would encourage parking in areas that would not have adverse impacts to existing parking availability.

4.16.6 MITIGATION MEASURES

Mitigation Measures are provided to lessen impacts that could be potentially significant to less than significant levels.

TRANS-MM-1: Repair roadways damaged by construction activities. If roadways, sidewalks, medians, curbs, shoulders, or other such features are damaged by the project's construction activities, as determined by the CPUC Environmental Monitor or the affected public agency, SCE shall coordinate repairs with the affected public agencies and ensure that any such damage is repaired to the pre-construction condition within 30 days from the end of the construction period.

4.16.7 ALTERNATIVES

The impact comparison Table 4.16-3 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between Proposed Route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.16-3: Traffic Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Route would follow Highway 74 to Ethanac Road, would be located adjacent to Ethanac Road and cross I-215, continuing west until reaching Goetz Road, where it would then follow Goetz Road	Could result in more work occurring in the ROW, which could cause more delays, detours, or traffic hazards. Impacts would still be less than significant	Greater Impact	Same as Proposed Route
C-2	Would cross Highway 74 at Ethanac Road and continue south toward the intersection of Highway 74 and I-15 before heading west at El Toro cut-off	Would be placed outside of the ROW of Highway 74 and would have less chance to adversely affect traffic on Highway 74	Less Impact	Same as Proposed Route
C-7	Would cross Highway 74 at Peach Street.	Would cross closer to downtown Lake Elsinore where traffic is somewhat heavier	Equal Impact	Same as Proposed Route
W-2	Would not be located in the ROW of any major roadways, and depending on route this segment could eliminate a highway crossing at I-15	Could eliminate a road crossing at I-15, depending on route	Less Impact	Same as Proposed Route
W-3	Would cross I-15 at Temescal Canyon Road underground	Extend the amount of work done in the ROW, could create more traffic impacts associated with delays, detours, and safety hazards, impacts would be less than significant	Greater Impact	Same as Proposed Route
W-5	Would not be located near any roadways in the Project Study Area and would eliminate a crossing of I-15 at Indian Truck Trail	This route would be located entirely away from any major roadways and would not directly impact traffic in the area	Less Impact	Same as Proposed Route

4.16.8 REFERENCES

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4.17 Utilities and Service Systems

4.17.1 ENVIRONMENTAL SETTING

The Proposed Project is located in southwestern Riverside County and crosses land within the cities of Lake Elsinore and Perris. Table 4.17-1 identifies the utilities and service systems in the Project Study Area.

Table 4.17-1: Summary of Utilities and Service Systems

Utilities/Service Systems	County of Riverside	City of Lake Elsinore	City of Perris
Power Distribution	SCE	SCE	SCE
Water Treatment and Distribution	Western Municipal Water District and Eastern Municipal Water District	Elsinore Valley Municipal Water District	Eastern Municipal Water District
Sewer Facilities	Septic Systems	Elsinore Valley Municipal Water District	Eastern Municipal Water District
Solid Waste Disposal	Riverside County Waste Management Department	Riverside County Waste Management Department	CR&R Disposal
Storm Water Drainage	Riverside County Flood Control and Water Conservation District	Riverside County Flood Control and Water Conservation District	Riverside County Flood Control and Water Conservation District
Natural Gas	Southern California Gas Company	Southern California Gas Company	Southern California Gas Company
Landfill	Badlands and El Sobrante Landfills	El Sobrante Landfill, Corona	Badlands Landfill, Moreno Valley

SOURCE: Riverside County 2003, City of Lake Elsinore 1990, City of Perris 2006, and RCWMD 2006

Project Study Area

The Proposed Subtransmission Line Route is located primarily along existing SCE transmission, subtransmission and distribution lines. The Proposed Subtransmission Line Route would cross one natural gas pipeline that runs from Lake Elsinore to the northwest in the same general direction as I-15. The Proposed Subtransmission Line Route crosses the existing natural gas pipeline in five locations. These locations include two each at Segments W-1 and W-10 and once at Segment W-4.

4.17.2 REGULATIONS, PLANS AND STANDARDS

Federal

There are no federal utility regulations applicable to the Proposed Project.

State

California Public Utilities Commission

The CPUC regulates intrastate and local natural gas and electrical distribution facilities and services, natural gas procurement, water utilities, pipelines, and production and gathering. Regulations related to natural gas services at the local level include the California Building Code, the California Health and Safety Code, the California Fire Code, and their associated implementing ordinances of Riverside County.

California Department of Water Resources

The California Department of Water Resources (CDWR) manages California's water resources. The regulations overseen by CDWR regarding water service availability include the Urban Water Management Planning Act and Senate Bills (SB) 221 and 610. The California Act, adopted in 1983, requires all urban water suppliers within the state to prepare an Urban Water Management Plan and update them every five years.

California Integrated Waste Management Act

The California Integrated Waste Management Act (Cal. Pub. Res. Code § 40000 et seq.) requires municipalities to divert 25 percent of their solid waste from landfills to recycling facilities by 1995 and 50 percent by 2000.

Regional and Local

Buildings and other structures and equipment owned and operated by a public utility or private utility company are subject to regulation by the California Public Utilities Commission; these projects are exempt from local regulations.

County of Riverside

The Riverside County General Plan Land Use Element includes several applicable policies (County of Riverside 2003):

> **LU 1.6:** Coordinate with local agencies, such as LAFCO, service providers and utilities, to ensure adequate service provision for new development. (AI 4)
>
> **LU 5.1:** Ensure that development does not exceed the ability to adequately provide supporting infrastructure and services, such as libraries, recreational facilities, transportation systems, and fire/police/medical services. (AI 3, 4, 74)
>
> **LU 5.2:** Monitor the capacities of infrastructure and services in coordination with service providers, utilities, and outside agencies and jurisdictions to ensure that growth does not exceed acceptable levels of service. (AI 3, 4, 32, 74)
>
> **LU 5.4:** Ensure that development and conservation land uses do not infringe upon existing public utility corridors, including fee owned rights-of-way and permanent easements, whose true land use is that of "public facilities." This policy will ensure that the "public facilities" designation governs over what otherwise may be inferred by the large scale general plan maps. (AI 3)

City of Lake Elsinore

The City of Lake Elsinore has no regulations for utilities applicable to the Proposed Project.

City of Perris

The City of Perris has no regulations for utilities applicable to the Proposed Project.

4.17.3 SIGNIFICANCE THRESHOLDS

According to CEQA significance criteria, the Proposed Project would result in a significant impact if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects
- Not have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements are needed
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs
- Comply with federal, state, and local statutes and regulations related to solid waste

4.17.4 IMPACT ANALYSIS

Impact Summary

The potential impacts to public utilities from construction and operation of the Proposed Project would not be significant. Construction of the Proposed Project would not require large amounts of water. Wastewater generated on site would be nominal and portable toilets would be utilized during construction. The Proposed Project would not discharge wastewater or exceed local water treatment requirements. No new or expanded water, water entitlements, or wastewater treatment facilities would be required for the Proposed Project. Poles that are removed and not reusable and the small amounts of other waste generated during construction would be accommodated in local landfills. Construction of the Proposed Subtransmission Line, telecommunications line, and substation improvements would increase reliability and capacity of the electrical service system in the area. Operation would not adversely affect public utilities and no detrimental effects would occur as a result of the construction and operation of the Proposed Project.

Construction Impacts

Water

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line and telecommunications line would require minimal amounts of water for dust control and human consumption. Water to all construction sites would be brought in by tanker truck (for applications involving dust control) and in small containers for human consumption. The amount of water that would be required during project construction is minimal and is also a one-time use, and therefore, there is no anticipated impacts to local or regional water supplies and supply delivery systems that would be affected by construction of the Proposed Subtransmission Line and telecommunications line.

Substations. Construction of minor improvements to the Valley and Ivyglen substations would require minimal amounts of water for dust control and human consumption. Water to all construction sites would be brought in by tanker truck (for applications involving dust control) and in small containers for human consumption. The amount of water that would be required during project construction is minimal and is also a one-time use, and therefore, there is no anticipated impacts to local or regional water supplies and supply delivery systems that would be affected by construction of the improvements to the substations.

Solid Waste Disposal

Subtransmission Line and Telecommunications Line. The Proposed Subtransmission Line includes the transfer of existing lines onto new poles and the removal of 215 to 275 existing poles. The existing poles would be removed and stockpiled for future use or, for those poles that could not be reused, disposed of in a landfill as non-hazardous waste. Local landfills have the capacity to accommodate the poles that would not be reused. The solid waste disposal would not be significant. The Proposed Project would also generate minor amounts of solid waste during construction. SCE's best management practices would ensure the proper disposal of solid waste. Solid waste volumes would be small enough that they would not cause significant impacts to landfills in the Project Study Area. The construction of the telecommunication line would be in parallel with the Proposed Subtransmission Line and would therefore not have any additional impact on solid waste disposal.

Substations. Small volumes of construction related debris would be disposed of during construction of improvements to the Valley and Ivyglen substations. Volumes would be small enough that they would not cause significant impacts to landfills in the Project Study Area.

Waste Water

Subtransmission Line and Telecommunications Line. Construction of the Proposed Subtransmission Line and telecommunications line would generate minor amounts of waste water during the construction period. SCE's best management practices would ensure the proper collection and disposal of waste water.

Substations. Improvements to the Valley and Ivyglen substations would not require the use of significant amounts of water during the construction period. SCE's best management practices would ensure the proper collection and disposal of waste water.

Operation Impacts

Electrical Service

Subtransmission Line and Telecommunications Line. Operation of the Proposed Subtransmission Line and telecommunications line would increase the amount and reliability of electrical service in the area. Operation of the Proposed Subtransmission Line and telecommunications line would not have a significant impact on any public utilities.

Substations. Proposed improvements to the substations would increase the amount and reliability of electrical energy available to the Electrical Needs Area and would have a net positive impact on the reliability of electrical service in the area. The proposed improvements to the substations would not have a significant impact on any public utilities.

4.17.5 SCE PROPOSED MEASURES

SCE would implement best management practices for construction waste management. SCE will take all solid waste to local disposal collection areas for proper permanent disposal according to regulations.

> **UTIL-SCE-1:** Crew personnel would clean the work site before leaving by removing all litter and debris.

4.17.6 MITIGATION MEASURES

Impacts to utilities and service systems would be less than significant, and therefore, no mitigation is required.

4.17.7 ALTERNATIVES

The impact comparison Table 4.17-2 identifies the alternative route segments, the difference between the Proposed Route setting and the alternative setting, any differences in impacts between proposed route and the alternatives, and whether there are additional SCE Proposed Measures or Mitigation Measures for the alternative segments.

Table 4.17-2: Utilities and Service Systems Impacts of the Alternative Route Segments

Alternative Route	Setting	Impact	Compared to Proposed Project	SCE Proposed Measures/ Mitigation Measures
E-2	Located along new routes following existing roadways through the City of Perris	Same as Proposed Route	Equal Impact	Same as Proposed Route
C-2	Follows existing 33 kV and 12 kV lines northwest of Highway 74 to El Toro Road	More existing poles would be replaced (100 to 125 rather than 0 to 25)	Greater Impact	Same as Proposed Route
C-7	Follows Highway 74 southwest from Ethanac Road along the east side, within the Caltrans ROW until Peach Street, where it crosses to the west side	Same as Proposed Route	Equal Impact	Same as Proposed Route
W-2	Follows I-15 north from Nichols Road to Concordia Ranch Road along the north side	Same as Proposed Route	Equal Impact	Same as Proposed Route
W-3	Crosses I-15 on existing 115 kV TSPs	Same as Proposed Route	Equal Impact	Same as Proposed Route
W-5	From the intersection of Hostettler Road and Desperado Drive, follows the south side of I-15 in a northwest direction to Temescal Canyon Road east of the Ivyglen Substation	Fewer existing poles would be replaced since this segment is not along an existing subtransmission or distribution line, and therefore there would be less impact on the receiving landfill and recycling facilities	Less Impact	Same as Proposed Route

4.17.8 REFERENCES

City of Lake Elsinore. 1990. *City of Lake Elsinore General Plan.*

City of Perris. 2006. *City of Perris General Plan.*

County of Riverside. 2003. *Riverside County General Plan.*

Los Angeles County Fire Department (LACFD). 2006. Website: www.lacofd.org/HometownFireStations/HometownFireStations.asp. Accessed April 11, 2006.

RCWMD (Riverside County Waste Management Department). 2006. Website: http://www.rivcowm.org. Accessed September 8, 2006.

Ruble, Eric. 2006. Personal communication with Eric Ruble, Operations Sergeant. Palmdale Sheriff's Station by Jennifer Cutler, MHA. April 11, 2006.

5.0 Comparison of Alternatives

5: COMPARISON OF ALTERNATIVES

5.1 Introduction

This chapter provides a comparison of the environmental impacts of the alternatives to the Proposed Project. CEQA Guidelines (Section 15126.6 (d)) require that an environmental impact report include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. CEQA does not require a review of alternatives for an Initial Study and Negative Declaration or Mitigated Negative Declaration. However, the CPUC General Order No. 131-D requires that an Application for a Permit to Construct include the "[r]easons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each."

The Project Objectives, defined in Section 1.3.3, are also described below.

5.1.1 PROJECT OBJECTIVES

SCE has identified the following objectives to meet the Proposed Project purpose and need:

- Serve projected electrical demand requirements in the Electrical Needs Area beginning in 2009
- Provide a direct connection between SCE's Valley 500/115 kV Substation and SCE's Ivyglen 115/12 kV Substation
- Increase system reliability by locating a second 115 kV subtransmission line within the Electrical Needs Area
- Improve operational and maintenance flexibility on subtransmission lines without interruption of service
- Meet project need while minimizing environmental impacts
- Meet project need in a cost-effective manner

These objectives guided SCE in developing a range of reasonable alternatives to the Proposed Project, or to the location of the Proposed Project, which would feasibly attain the project objectives. Only one system alternative satisfies the project objectives, while the No Project Alternative does not satisfy any of the objectives. All of the corridor alternatives and routing alternatives evaluated in the PEA satisfy the project objectives. The alternatives differ only in the route location and length of the Proposed Subtransmission Line and telecommunications line, and specific environmental impacts.

5.2 Comparison of Alternatives

5.2.1 DESCRIPTION OF IMPACTS OF ALTERNATIVES

The analyses presented in Chapter 4 indicate that several of the alternative route segments would result in more significant impacts, including significant and unavoidable impacts, than the Proposed Route.

5.2.2 ALTERNATIVE IMPACTS SUMMARY TABLE

Table 5.2-1, Summary of Impacts and Significance, provides a comparison of the Proposed Route segments with each of the alternative segments that were evaluated in the PEA. The shaded columns represent the segments comprising the Proposed Route.

5.3 Environmentally Superior Alternative

All potential impacts from the Proposed Route could be reduced to less than significant levels with the implementation of SCE Proposed Measures and mitigation measures (as described in Chapter 4).

Taken individually, several of the segments would result in fewer overall impacts or potential impacts of less significance when compared to the closest corresponding segment of the Proposed Route. However, taken as a whole, the Proposed Route would result in the fewest overall impacts.

Table 5.2-1: Summary of Impacts and Significance

Line Segment / Environmental Parameter	E-1	E-2	C-1	C-2	C-3	C-4	C-6	C-7	W-1	W-2	W-3	W-4	W-5	W-8	W-10
Aesthetics	◒	●	◕	◕	◒	◒	◕	●	◒	●	◒	◒	●	◕	◕
Agricultural Resources	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	○	◔	◔	○	◔
Air Quality	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒	◒
Biological Resources	◕	◕	◕	◕	◔	◕	◕	◕	◕	◕	◔	◕	◕	◕	◕
Cultural Resources	◕	◕	◕	◕	○	◕	◕	◕	◕	◕	◕	◕	◕	○	○
Geology, Soils, and Seismicity	◔	◔	◔	◔	◔	◔	◔	◔	◕	◕	◕	◕	◕	◕	◕
Hazards/Hazardous Materials	◕	◔	◔	○	◔	◔	◕	◔	◕	○	◕	◕	◔	○	◕
Hydrology and Water Quality	◔	◕	◔	○	◔	◔	◕	○	◔	◔	◕	◕	○	○	◕
Land Use and Planning	○	◔	○	○	◔	◔	◔	○	◔	○	○	◕	●	◔	◔
Mineral	◔	◔	◔	◔	◔	◕	◕	◔	◔	◔	◔	◔	◔	◔	◔
Noise	◒	◔	◒	◒	◒	◒	◔	◒	◔	◔	◔	◔	◔	◔	◔
Population and Housing	○	○	○	◔	○	○	○	○	○	○	○	○	○	○	○
Public Services	○	◔	○	○	◔	○	○	○	○	○	○	○	○	○	○
Recreation	○	◔	○	○	○	○	○	◔	○	○	○	○	○	○	○
Transportation and Traffic	◒	◒	◒	◔	◔	◔	◒	◒	◔	◔	◒	◔	◔	◒	◔
Utilities and Service Systems	○	○	○	◔	◔	○	◔	○	○	○	○	◔	◔	○	○

FOOTNOTE: Highlighted columns are route segments comprising the Proposed Route.

KEY:

● = Potentially significant and not mitigable (to less than significant)

◕ = Potentially significant but mitigable (to less than significant)

◒ = Temporarily potentially significant but mitigable (to less than significant)

◔ = Not potentially significant

○ = No impact

SOURCE: MHA 2006

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6.0 Other CEQA Considerations

6: OTHER CEQA CONSIDERATIONS

6.1 Mandatory Findings of Significance

This chapter discusses the broader questions posed by CEQA. These include significant effects that cannot be mitigated to less than significant levels, irreversible/irretrievable commitment of resources, the balance between short and long-term uses of the environment, growth-inducing impacts, and cumulative impacts.

6.1.1 SIGNIFICANT ENVIRONMENTAL EFFECTS OF PROPOSED PROJECT THAT CANNOT BE MITIGATED TO INSIGNIFICANCE

The Proposed Project would not result in any significant impacts with implementation of SCE proposed measures and mitigation measures.

6.1.2 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES; SHORT AND LONG-TERM USES OF THE ENVIRONMENT

The CEQA Guidelines (Section 15126.2(c)) require that an environmental document identify significant irreversible environmental changes that would be caused by the project. Construction of the Proposed Project would require fossil fuels, a nonrenewable resource, to power construction vehicles. Additional resources that could be irretrievably lost could include soils (resulting from water and wind erosion in disturbed areas) and water (used for dust control).

The Proposed Project would meet the need to provide a reliable source of electricity to the Electrical Needs Area. Its construction and operation would be consistent with federal and state policies for reliability. For these reasons, limited irreversible and irretrievable resource commitments are acceptable.

6.2 Cumulative Effects

6.2.1 INTRODUCTION

Cumulative impacts are defined in CEQA as two or more individual effects which, when considered together, are considerable, or which compound or increase other environmental effects (CEQA Section 15130 (a) and (b)).

Consistent with CEQA requirements and CPUC Rule 17.1, this section of the PEA uses the methodology in Section 15130 (b)(1)(A) to analyze potential cumulative effects of the Proposed Project. Descriptions of related projects near the Proposed Project that could potentially contribute to cumulative environmental effects in the area are described in Tables 6.1-1, 6.1-2, 6.1-3, and 6.2-4. The potential for cumulative impacts associated with the Proposed Project are discussed for each resource section where a cumulative effect may occur.

Cumulative impacts are addressed in this PEA to document the conclusion that the project would not result in any considerable cumulative effects.

6.2.2 RELATED PROJECTS

The cumulative impact analysis considers impacts of the Proposed Project, with other known and reasonably foreseeable projects (Tables 6.2-1, 6.2-2, 6.2-3, and 6.2-4). The area considered in this cumulative analysis was determined by considering the distance that could feasibly cause overlapping effects for resource categories such as traffic, air, or noise. Given the minimal potential for environmental effects of the Proposed Project, the area considered for cumulative effects is relatively small. The area examined for cumulative effects includes projects with at least a portion of activities that would occur within 0.5 mile of the Proposed Subtransmission Line route.

Roadway Widening Projects

Nichols Road would be widened at some point in the future east and west of I-15 from 2- to 6-lanes with a future right-of-way 120 feet wide. Temescal Canyon Road would be widened at some point in the future along its entire length within the City of Lake Elsinore's Sphere of Influence from 2- to 4-lanes with a future right-of-way 100 feet wide.

Table 6.2-1: Proposed Projects in the County of Riverside

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
Residential						
Bisected	TR 22519	Tract Map	N/A	N/A	N/A	N/A
Bisected	TR 32022	Tract Map	N/A	127.4 acres	265 lot subdivision	N/A
Within 0.5 mile		Tract Maps	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
NOTE: N/A: Not available						

SOURCE: Riverside County 2006

Table 6.2-2: Proposed Projects in the City of Lake Elsinore

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
Residential						
N/A	2004-13 CRS 779	Design Review	Within the Alberhill Ranch Specific Plan Area	N/A	52 single family detached dwelling units and a model home complex	Application Received 7/29/2004
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	2 Projects	Design Review	Within the Ramsgate Special Plan.	163.8 acres	578 single family dwelling units	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	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	90-1 and 3	Specific Plan	Outlet Center Specific Plan	N/A	N/A	Approved 8/22/00
NOTE: N/A: Not available						

SOURCE: City of Lake Elsinore 2006

Table 6.2-3: Proposed Projects in the City of Perris

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Date Approved
Residential						
Adjacent	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	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 Jacinto River migration land, passive park facilities and open space	Applied for Tentative Tract Map 12/15/05
Adjacent	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	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	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 ware house/distribution 170,268 multiuse and appurtenances	2005-2006

SOURCE: City of Perris 2006

Table 6.2-4: Proposed Projects by SCE

Proximity to Proposed Project	Project Number	Name/Type	Location	Size	Description	Estimated Construction Date
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
N/A	N/A	Fogarty Substation	N/A	N/A	Construct the Fogarty 115/12 kV substation with 56 MVA of transformation and 9.6 MVAR of capacitors, pickup four existing circuits from the Centex P.T. & Dryden P.T.'s and construct two new circuits for a total of 6 - 12 kV circuits	2009
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
0 mile	N/A	Valley-Elsinore-Fogarty Subtransmission Line	N/A	N/A	Reconductor the Elsinore leg of the Valley-Elsinore-Fogarty Subtransmission Line	2009
NOTE: N/A: Not available						

SOURCE: SCE 2006

6.2.3 SIGNIFICANCE CRITERIA

The CEQA Environmental Checklist provides significance criteria for assessing the cumulative impacts of the Proposed Projects. A project causes a potentially significant impact if:

> The project has impacts that are individually limited, but cumulatively considerable, where "cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

6.2.4 CUMULATIVE IMPACTS

Overview

The Proposed Project would result in less than significant impacts to all environmental resource categories with SCE proposed measures and/or with mitigation measures. However, incremental impacts of the Proposed Project when added to other past, present, or reasonably foreseeable future projects would have the potential to result in cumulatively considerable impacts to:

- Aesthetics
- Air Quality
- Noise
- Traffic and Transportation

Aesthetics

The Proposed Project will incrementally contribute to the changing visual landscape in the project region. That change is being led by new residential, commercial, and industrial development, which will be served by the Proposed Project. Proportionately, the addition of the Proposed Project's most visible elements - LDS poles, TSPs, and the conductors – will only add a minor incremental change to the existing visual landscape when considered within the context of the project region's on-going development activity.

Air Quality

The project region is a current center of development and construction activity. Because of the underlying natural setting, much of the development activity requires substantial grading and earthwork prior to the actual construction process. It is probable that construction of the Proposed Project would occur concurrently with other construction in the project region, resulting in a cumulative contribution of airborne emissions to the airshed. Fugitive dust and equipment combustion emissions from the construction of several projects in the area may lead to cumulative dust emissions in the area.

The Proposed Project would comprise only a small fraction of the overall regional construction and construction emissions. The Proposed Project, even though it would not on its own exceed any air emissions standards with implementation of SCE measures, would have an incremental contribution to a cumulative air quality effect from the large-scale construction occurring in the project region.

The Proposed Project after construction would have no long-term air quality impacts, and therefore, would not be cumulatively considerable.

Noise

Simultaneous construction across the project region could generate considerable noise. The noise would not likely be considerable because sensitive receptors are limited (people would not be living within subdivisions when they are under construction).

Operation of the Proposed Project would not generate long-term noise that would combine with other noise generated in the Project Study Area or project region.

Traffic and Transportation

Construction of the Proposed Project would coincide with other construction activities in the project region and Project Study Area. The cumulative effect of construction traffic for the Proposed Project and all other construction activities in the Project Study Area may temporarily reduce levels of service on area roadways, especially affecting non-construction traffic traveling through the region. When considered with all the other development in the area, and implementation of SCE Proposed Measures, the traffic associated with the Proposed Project would not result in a cumulatively considerable impact.

The limited number of site visits required for operation and maintenance of the Proposed Project would not result in any potentially significant long-term traffic or transportation-related impacts.

6.3 Growth-Inducing Impacts

The potential for a subtransmission line project, such as the Proposed Project, to induce or accommodate growth does not mean that it would actually result in growth. Local governments in California can significantly increase and decrease growth potential through the creation and implementation of policies that are specifically designed to promote or minimize growth. The creation of jobs, land development, and the necessary supporting infrastructure are also needed to support existing and planned future populations.

The Proposed Project will serve the Electrical Needs Area. The electric utilities infrastructure does not induce growth, but rather follows it and is necessary to accommodate existing and planned demand.

The Proposed Project would not induce population growth. SCE would draw the labor required for construction from its current workforce or contractors. The limited, temporary nature of this employment would not result in long-term growth in the area. In addition, no long-term employment would occur in association with the operational phase of the Proposed Project.

Upgrades would ensure that the system would be able to meet current and future electrical subtransmission requirements in the area without encouraging additional growth. No significant effects related to growth inducement would occur associated with the Proposed Project.

6.4 Indirect Effects

This section discusses CEQA Guidelines Section 15358 (a)(2) and CPUC PEA Guidelines requirements for addressing potential indirect impacts of a proposed project. Indirect effects are those impacts resulting from the development of a project (both construction and operation-related impacts) that occur either after implementation of the project or at some distance away from the project. General examples of indirect effects include impacts resulting from development that could change land use patterns, population density or growth rate, and result in impacts on environmental conditions, such as air quality, water quality and other natural systems.

The Proposed Project would not result in any indirect effects that would be significant after mitigation. Indirect effects have been assessed in Chapter 4 of this PEA and no other significant indirect effects would occur.

6.5 Conclusion

The Proposed Project would not result in any long-term significant, cumulative, growth-inducing, or indirect environmental impacts with implementation of SCE's proposed measures and mitigation measures outlined in Chapter 4 of this PEA.

6.6 References

City of Lake Elsinore. 2006. Visit to Planning Department by Jennifer Cutler, MHA, on August 8, 2006.

City of Perris. 2006. Visit to Planning Department by Jennifer Cutler, MHA, on August 8, 2006.

Riverside County. 2006. GIS Database. 2006.