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 South 115kV Subtransmission Project	)))))	Application No. _______________

PROPONENT'S ENVIRONMENTAL ASSESSMENT VALLEY SOUTH 115 kV SUBTRANSMISSION PROJECT

Volume 1 of 4

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Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
A.D.	anno domini
A-1	Light Agriculture
AB	Assembly Bill
ACSR	aluminum conductor steel reinforced
ADT	average daily traffic
AGL	above ground level
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
AP	Alquist-Priolo
A-P	Light Agriculture with Poultry
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measures
AQMP	Air Quality Management Plan
Aspen	Aspen Environmental Group
B.P.	before present
BBI	Bloom Biological Inc.
BGEPA	Bald and Golden Eagle Protection Act
Bgs	below ground surface
BMP	best management practice
BRA	Biological Resources Assessment
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupation and Safety Health Administration
Caltrans	California Department of Transportation
CAPS	Criteria Area Plant Species

CARB	California Air Resources Board
CCR	California Code of Regulations
CDC	California Department of Conservation
CDF	State of California, Department of Finance
CDFW	California Department of Fish and Wildlife (formerly called the California Department of Fish and Game)
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGP	Statewide Construction General Permit
CGS	California Geological Survey
CH_4	methane
CIWMP	Countywide Integrated Waste Management Plan
CJUTCM	California Joint Utility Traffic Control Manual
CMP	Congestion Management Program
CMS	Congestion Management System
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
COMM	Communications
CPRC	California Public Resources Code
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSSC	California Species of Special Concern
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels

DBESP	Determination of Biological Equivalent or Superior Preservation
DHS	United States Department of Homeland Security
DOGGR	Department of Conservation/Division of Oil, Gas, and Geothermal Resources
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DWQ	Division of Water Quality
DWR	Department of Water Resources
ECC	Emergency Command Center
EDR	Environmental Data Resources, Inc.
EIC	Eastern Information Center
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
ENA	Electrical Needs Area
EOP	Emergency Operations Plan
EPRI	Electric Power Research Institute
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FRC	fault return conductor
FTA	Federal Transit Administration
G.O.	General Order
GBN	ground-borne noise
GBV	ground-borne vibration
GHG	greenhouse gas
GIS	geographical information system
GPS	global positioning system
GWP	global warming potential
HCP	Habitat Conservation Plan
HOV	high-occupancy vehicle
HP	horsepower

HSWA	Hazardous and Solid Waste Act
Hz	Hertz
I	Interstate
I-15	Interstate 15
I-215	Interstate 215
IOU	investor-owned public utility
IPCC	Intergovernmental Panel on Climate Change
IRWMP	Integrated Regional Watershed Management Plan
Kcmil	thousand circular mil
Kdvg, Kgb, Kpvg, Kpvt	Cretaceous-aged igneous rocks
Kgb	Cretaceous-aged gabbro
KOP	Key Observation Point
kV	kilovolt
LACM	Natural History Museum of Los Angeles County
lbs/day	pounds per day
LDL	Larson Davis Laboratories
L_{dn}	day-night average noise level
L_{eq}	equivalent noise level
L_{max}	maximum noise level
L_{min}	minimum noise level
L_n	statistical descriptor
LOS	level of service
LST	localized significance threshold
LUP	Linear Underground/Overhead Projects
L_v, VdB	vibration velocity level
LWS	light weight steel
MBTA	Migratory Bird Treaty Act
MEER	Mechanical and Electrical Equipment Room
mg/L	milligrams per liter
Mgd	million gallons per day
micro in/sec	micro inch per second

MRZ	Mineral Resource Zones
MS4s	municipal separate storm sewer systems
MVA	mega volt-amperes
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Planning
NEPA	National Environmental Policy Act
NEPS	Narrow Endemic Plant Species
NFIP	National Flood Insurance Program
NIPP	National Infrastructure Protection Plan
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRA	Natural Resource Assessment
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHGW	overhead ground wire
OHP	Office of Historic Preservation
OHWM	ordinary high water mark
OPGW	Optical Ground Wire
PCE	passenger car equivalent
PEA	Proponent’s Environmental Assessment
PM_{10}	particulate matter smaller than 10 microns
$PM_{2.5}$	particles (particulates) smaller than 2.5 microns diameter
Ppm	parts per million
PPV	peak particle velocity

PRC	Public Resources Code
PRSM	Paleontological Resources Sensitivity Map
PSE	Participating Special Entity
PUHSD	Perris Union High School District
PVC	polyvinyl chloride
Qof	Quaternary older fan
Qps	Pauba Formation
Qvoa	Quaternary very old alluvium
Qvof	Quaternary very old fan
Qya	Quaternary younger alluvium
Qyf	Quaternary younger fan
Qyv	Quaternary younger valley deposits
RCA	Regional Conservation Authority
RCFCWCD	Riverside County Flood Control and Water Conservation District
RCFD	Riverside County Fire Department
RCHCA	Riverside County Habitat Conservation Agency
RCIP	Riverside County Integrated Project
RCRA	Resource Conservation and Recovery Act
RCTC	Riverside County Transportation Commission
RCWD	Rancho California Water District
RHNA	Regional Housing Needs Assessment
RMS	root mean square
ROW	right-of-way
ROW	right-of-way
RoWD	Report of Waste Discharge
R-R	Rural Residential
RTA	Riverside Transit Agency
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
S_a	spectral acceleration
SAC	stranded aluminum conductor

SARA	Superfund Amendments and Reauthorization Act
SARWQCB	Santa Ana Regional Water Quality Control Board
SBCM	San Bernardino County Museum
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDRWQCB	San Diego Regional Water Quality Control Board
SF6	sulfur hexafluoride
SMARA	Surface Mining and Reclamation Act
SMGB	State Mineral and Geology Board
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SOI	Sphere of Influence
SO_X	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
ssp.	subspecies
SWAT	Special Weapons and Tactics
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plans
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	transportation concept reports
TDM	Transportation Demand Management
TDS	total dissolved solid
TMDL	total maximum daily load
TPA	Temporary Ponded Area
TPZ	timberland preserve zone
TRC	TRC Solutions Incorporated
Trmq and Trmu	Triassic-aged metamorphic rocks
TSCA	Toxic Substances Control Act of 1976

TSP	tubular steel pole
U.S.C.	United States Code
UBC	Uniform Building Code
USA	Underground Service Alert
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Services
USGS	United States Geological Survey
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
Winchester MAC	Winchester Municipal Advisory Council
WRCMSHCP	Western Riverside County Multiple-Species Habitat Conservation Plan

Chapter 1
PEA Summary

In accordance with California Public Utilities Commission (CPUC) General Order 131-D (G.O. 131-D), Southern California Edison (SCE) is submitting this Proponent's Environmental Assessment (PEA) as part of its application for a "Permit to Construct" for the Valley South 115 kilovolt (kV) Subtransmission Project (Proposed Project) in the cities of Murrieta, Menifee, Temecula, and portions of unincorporated communities of southwestern Riverside County.

1.1 Project Components

The Proposed Project consists of the following major components:

- Modification of SCE's existing Valley 500/115 kV Substation which would include equipping an existing 115 kV line position and providing protection equipment as required
- Construction of a new 115 kV Subtransmission Line approximately 12 miles in length originating at SCE's existing Valley 500/115 kV Substation and terminating at a tubular steel pole (TSP)
- Replacement of approximately 3.4 miles of existing conductor from the preceding TSP to an existing TSP
- Relocation of existing distribution and telecommunication lines would be required to support the installation of the new 115 kV subtransmission line
- Installation of telecommunications facilities to connect the Proposed Project to SCE's existing telecommunication system

1.2 Project Location

The Proposed Project is located within the cities of Menifee, Murrieta, Temecula, and portions of unincorporated communities of southwestern Riverside County (see Figure 1.2 Electrical Needs Area [ENA]). One 115 kV subtransmission line, approximately 15.4 miles in length, is proposed. The proposed 115 kV subtransmission line would extend from SCE's existing Valley 500/115 kV Substation in the City of Menifee crossing the northeastern portion of the City of Menifee and running south along Leon Road to the south side of Benton Road where it continues in a southerly direction paralleling Leon Road in Riverside County into the City of Temecula terminating on the south of Nicolas Road approximately 0.21 of a mile west of SCE's Triton Substation (see Figure 1.1 Proposed Project Location and Figure 1.2 Electrical Needs Area). Additionally, SCE may utilize an existing material staging yard in the City of Perris.

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Proposed Project Location

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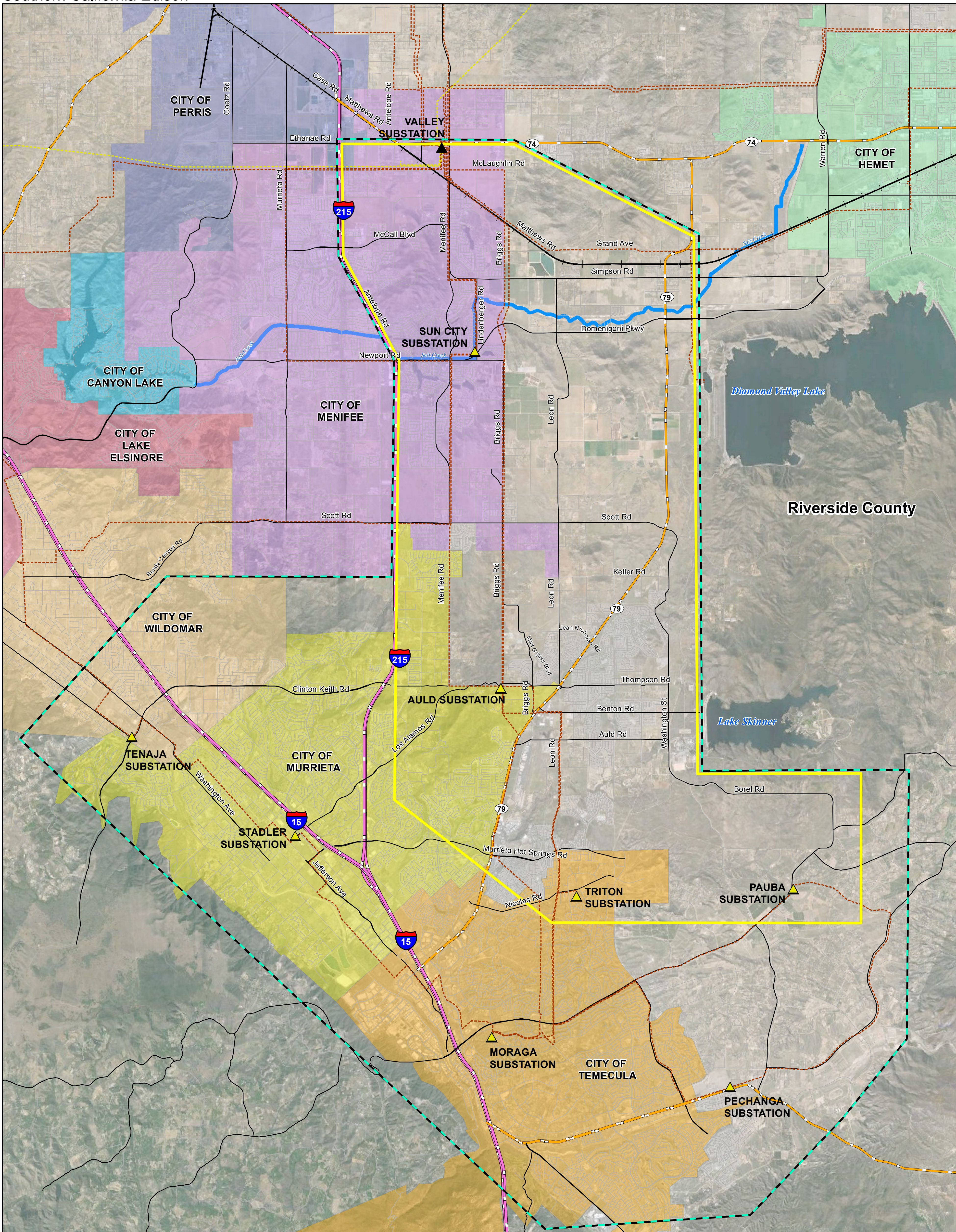
VALLEY SOUTH 115 KV SUBTRANSMISSION PROJECT **FIGURE 1.2**

Southern California Edison — Electrical Needs Area



Study Area
Electrical Needs Area

Existing Facilities
- 115 kV Substation
- 500 kV Substation
- Transmission Line
- Subtransmission Line

Sources: SCE, 2014; Riverside County, 2014; Aerial Image: Google Earth Pro, 2014

0 — 1 Miles
1:110,000

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1.3 Project Need and Alternatives

As described further in Chapter 2, Project Purpose and Need and Objectives, the Proposed Project is being proposed to meet the following objectives:

- Provide safe and reliable electrical service
- Add capacity to serve long-term forecasted electrical demand requirements in the ENA as soon as possible after receipt of applicable permits
- Maintain or improve system reliability and provide greater operational flexibility within the ENA
- Meet Proposed Project needs while minimizing environmental impacts
- Design and construct the Proposed Project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects

Although various subtransmission route alternatives were considered during the development of the Proposed Project, the Proposed Project was ultimately selected because it best meets the objectives while resulting in the fewest potential environmental impacts.

1.4 Agency Coordination

SCE has consulted with representatives from the CPUC, Riverside County; City of Menifee; City of Murrieta; and City of Temecula. Communications with these agencies occurred primarily between 2011 and 2014. Summaries of these communications are presented in the following subsections.

SCE also sent letters requesting comments from the following tribal entities: Cahuilla Band of Indians, Los Coyotes Band of Mission Indians, Morongo Band of Mission Indians, Pala Band of Mission Indians, Pauma & Yulma Reservation, Pechanga Band of Mission Indians, Pechanga Cultural Resources Department, Ramona Band of Cahuilla Mission Indians, Rincon Band of Mission Indians, Santa Rosa Band of Mission Indians, Soboba Band of Luiseno Indians, and William J Pink. SCE received responses from the following Native American tribes: Cahuilla Tribal Environmental Protection Office, Pala Tribal Historic Preservation Office, Pechanga Cultural Resources Office of the Temecula Band of Luiseno Mission Indians, the Cultural Committee of the Rincon Band of Luiseno Indians and Soboba Band of Luiseno Indians. The SCE Tribal Liaison Brian McDonald placed telephone calls to the tribal respondents and SCE sent comment response letters to Cahuilla, Pechanga, and Soboba. Summaries of these communications are presented in the following subsections.

1.4.1 California Public Utilities Commission

Beginning in 2012, SCE conducted several briefings with CPUC Project Manager Eric Chiang and CPUC consultant Aspen Environmental Group (Aspen). On February 11, 2013, SCE, Eric Chiang, and Aspen conducted a field visit of the Proposed Project area.

This field visit did not include the 115 kV subtransmission line route between Benton Road in Riverside County and the south side of Nicolas Road in the City of Temecula.

1.4.2 Local Jurisdictions

1.4.2.1 Riverside County

SCE conducted initial briefings about the Proposed Project with Supervisor Jeff Stone and his staff in 2011 during route selection. SCE conducted additional briefings in 2012 after the preferred route was selected. The most recent briefing occurred in September 2013 after SCE added additional scope to the Proposed Project. The county expressed no concerns about the changes to the Proposed Project.

SCE also conducted public briefings with the Winchester Municipal Advisory Council (Winchester MAC) in April 2013, January 2014, and November 2014. Each briefing provided an overview of the Proposed Project and provided an opportunity for the Winchester MAC and public to ask questions about the Proposed Project. The Winchester MAC is an advisory board that reports to Supervisor Stone and provides input on issues affecting the unincorporated community of Winchester, which is located east of Menifee. The Winchester MAC has since been reorganized by Riverside County to include additional unincorporated areas and is now called the Winchester-Homeland Municipal Advisory Council.

1.4.2.2 City of Menifee

SCE conducted initial briefings about the Proposed Project with Don Allison, Director of Public Works, and staff in 2011 during route selection. SCE conducted additional briefings in 2012 after the preferred route was selected. The most recent briefing occurred in September 2013 after SCE added additional scope to the Proposed Project. The city expressed no concerns about the changes to the Proposed Project.

1.4.2.3 City of Murrieta

SCE conducted initial briefings about the Proposed Project with Patrick Thomas, Director of Public Works, in fall 2011 during route selection. SCE conducted additional briefings in 2012 after the preferred route was selected. The most recent briefing occurred in September 2013 with Bob Moehling, Acting Public Works Director, and Jeff Hitch, Public Works Construction Manager, after SCE added additional scope to the Proposed Project.

1.4.2.4 City of Temecula

SCE did not conduct briefings with the City of Temecula during the early stage of the Proposed Project because at that time the proposed routes did not affect the city. SCE first met with Greg Butler, then Director of Public Works and currently Assistant City Manager, regarding the Proposed Project in August 2013 after it was determined that the proposed route options would need to be extended into Temecula. SCE also conducted briefings with Aaron Adams, City Manager, in September 2013.

1.4.2.5 City of Perris

The Proposed Project is not located within the City of Perris. SCE may utilize a material staging yard within the city boundaries. Additional information regarding the potential material staging yard locations is provided within Chapter 3 – Project Description.

1.4.3 Native American Heritage Commission and Tribal Coordination

1.4.3.1 Band of Cahuilla Indians

SCE Tribal Liaison Brian McDonald placed calls to each tribe that responded to SCE's initial letter regarding the Proposed Project. During SCE's conversation with the Cahuilla, the tribe expressed no additional concerns.

1.4.3.2 Pechanga Band of Luiseno Indians

SCE met with Anna Hoover of the Pechanga Band of Luiseno Indians in July 2012. SCE participated in project field review and cultural site visit events with her in September 2012. The tribal representative expressed a high level of concern over the possibility of affecting archaeological site CA-RIV-1074 during construction of the Proposed Project and concern over the potential for making unanticipated discoveries during construction along certain segments of the Proposed Project. She also expressed a desire to have tribal monitors present during construction in these areas. Accordingly, SCE sent letters and a map to Pechanga in September 2012, requesting that they return shape files depicting areas of particular concern. At this time, no correspondence has been received from Pechanga. Soboba's mapped areas of concern are similar to those that Pechanga noted verbally in the field.

With the addition of a new reconductoring element to the Proposed Project, a new set of letters and maps was mailed by SCE to the original list of contacts in June 2013. After a November 2013 meeting with Pechanga on a separate topic, Anna Hoover expressed verbally that the tribe had no comment beyond their original responses for the earlier definition of the Proposed Project, but anticipated continuing contacts with SCE as the Proposed Project progresses.

1.4.3.3 Soboba Band of Luiseno Indians

SCE met with Joe Ontiveros of the Soboba Band of Luiseno Indians in July 2012. SCE participated in project field review and cultural site visit events with him that same month. The tribal representative expressed a high level of concern over the possibility of affecting archaeological site CA-RIV-1074 during construction of the Proposed Project and concern over the potential for making unanticipated discoveries during construction along certain segments of the Proposed Project. He also expressed a desire to have tribal monitors present during construction in these areas. Accordingly, SCE sent letters and a map to Pechanga in September 2012, requesting that they return shape files depicting areas of particular concern. Soboba emailed shape files to SCE in November 2012. Soboba's mapped areas of concern are similar to those that Pechanga noted verbally during their scheduled project field review.

With the addition of a new reconductoring element to the Proposed Project, a new set of letters and maps was mailed by SCE to the original list of contact in June 2013. Soboba expressed the same concerns and interests as in their original response.

1.5 PEA Contents

This PEA, which was prepared in accordance with the November 24, 2008, *WORKING DRAFT Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects* issued by the CPUC, is divided into five sections. Chapter 1, PEA Summary, discusses the contents and conclusions of the PEA and describes SCE's ongoing and past coordination efforts. Chapter 2, Project Purpose and Need and Objectives, outlines the Proposed Project's objectives.

A detailed description of the Proposed Project is provided in Chapter 3, Project Description. This discussion includes specifics regarding the Proposed Project location, existing system, the Proposed Project components, permanent and temporary land/right-of-way (ROW) requirements, construction methods, construction schedule, anticipated operations and maintenance activities, and Federal and local permits that would be obtained for the Proposed Project.

Chapter 4, Environmental Impact Assessment Summary, includes an environmental impact assessment summary and a discussion of the existing conditions and potential anticipated impacts of the Proposed Project for each of the resources areas identified by the California Environmental Quality Act (CEQA) Guidelines. The CPUC's Checklist indicates that the environmental setting section can be provided separately or combined with the impacts and applicant proposed measures (APMs). SCE has elected to combine the environmental setting, impacts, and APMs for each resources area in Chapter 4.

Chapter 5, Detailed Discussion of Significant Impacts, identifies the potentially significant impacts resulting from the Proposed Project, evaluates alternatives to the Proposed Project, describes the justification for the preferred alternative, and discusses the Proposed Project's potential to induce growth in the area.

Throughout this PEA, SCE has addressed all items in the CPUC PEA Checklist. To facilitate confirmation of this and review of the PEA, Table 1.1, PEA Checklist Key, which identifies the section in which each checklist item is addressed, has been included at the end of this section.

1.6 PEA Conclusions

This PEA analyzes the potential environmental impacts associated with construction, operation, and maintenance of the Proposed Project. The following 12 resource areas would not be impacted by the Proposed Project or would experience Less Than Significant impacts:

- Agricultural and Forestry Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Although the Proposed Project would result in potentially significant impacts to air quality, biological, cultural (paleontological), traffic and transportation resources, these impacts would be reduced to a Less Than Significant level with the implementation of APMs. These impacts are summarized as follows:

- Air Quality – temporary net increases of emissions of nitrogen oxides (NOx) and particulate matter smaller than 10 microns (PM10) in excess of the South Coast Air Quality Management District's regional mass-based thresholds during construction of the Proposed Project
- Biological Resources – temporary impacts to special-status species and habitats associated with construction of the proposed 115 kV subtransmission line
- Cultural Resources (paleontological) – temporary impacts to unknown paleontological resources associated with construction of the proposed 115 kV subtransmission line
- Traffic and Transportation – temporary impacts to traffic on State Route 79 (SR-79) associated with construction of the proposed 115 kV subtransmission line

The APMs that would be implemented to reduce impacts to a Less Than Significant level are discussed in detail in their relevant sections in Chapter 4, Environmental Impact Assessment Summary.

While the APMs referenced above would reduce the environmental impacts resulting from the Proposed Project, impacts to aesthetics during operation are expected to remain significant and unavoidable. Expected significant and unavoidable impacts are summarized as follows:

- Aesthetics – along Leon Road at Lantana Way, the Proposed Project would result in a substantial change to views from a neighborhood trail and residences along Leon Road from this location (KOP 8) as it would install new wood poles where no above ground electrical poles currently exist.

Each of the resource areas and the APMs are discussed in detail in their respective sections in Chapter 4 of this PEA.

1.7 Public Outreach

Public outreach and communications are critical elements of SCE's planning process. SCE identified and reached out to key stakeholders in the Proposed Project area to solicit input and provide information about this Proposed Project. SCE's outreach efforts focus on educating stakeholders about the Proposed Project need and identifying their concerns about the Proposed Project by written notification, newspaper advertisement, website, public meetings, and a project hotline.

In 2010, SCE initiated the Valley South 115 kV Subtransmission Project. In 2011, before route selection was complete, SCE conducted initial briefings with jurisdictions within the project study area. SCE has conducted subsequent briefings throughout the development of the Proposed Project. Summaries of these discussions are presented above in Section 1.4, Agency Coordination. No major concerns have been reported by jurisdictions. In November 2012, SCE mailed a project information pamphlet to property owners located within 300 feet of the Proposed Project. SCE conducted a public open house session in December 2012 in the City of Menifee. No major concerns were reported by members of the public at that time. In 2013 and 2014, SCE continued with stakeholder briefings, as described in Section 1.4.1. In September 2014 SCE mailed an updated project newsletter to property owners within 600 feet of the project (beyond the standard 300 feet). In November 2014, prior to filing the PTC Application, SCE conducted a public information session in Murrieta. The purpose of the information session was to educate the community about the project and provide an opportunity for them to ask questions. Some members of the public expressed concerns about impacts to viewsheds and EMF. SCE also conducted briefings with key stakeholders, including local developers and school districts. Summaries of the discussion with a local developer are presented below in Section 1.7.1, Controversy and/or Major Issues.

SCE regularly reevaluates public outreach strategies based upon the needs of individual communities, input from key stakeholders and the public, and the needs of the Proposed Project. SCE will continue to maintain the project website and hotline throughout the life of the Proposed Project in order to provide the public with timely information, answer questions, and address concerns related to the Proposed Project.

SCE plans to provide in person briefings to local jurisdictions at key milestones throughout the life of the Proposed Project, such as prior to filing the application, immediately after a final decision, and prior to the start of construction (assuming the Proposed Project is approved).

1.7.1 Controversy and/or Major Issues

In February 2013, SCE met with a residential developer to discuss their concerns regarding the Proposed Project. The developer expressed concerns about the Proposed Project's proximity to their two developments in the Winchester area. The developer expects to begin construction sometime in 2014.

Table 1.1 PEA Checklist Key

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
Chapter 1, PEA Summary		
	Include major conclusions of the PEA.	Section 1.6, PEA Conclusions
	List any areas of controversy.	Section 1.4, Agency Coordination, Section 1.7.1, Controversy and/or Major Issues
	Include a description of public outreach efforts, if any.	Section 1.7, Public Outreach
	Include a description of inter-agency coordination, if any.	Section 1.4, Agency Coordination
	Identify any major issues that must be resolved, including the choice among reasonably feasible alternatives and mitigation measures, if any.	Section 1.3, Project Need and Alternatives Section 1.6, PEA Conclusions Section, 1.7.1, Controversy and/or Major Issues
Chapter 2, Project Purpose and Need		
2.1 Overview	Include an analysis of Project objectives and purpose and need that is sufficiently detailed so that the Commission can independently evaluate the Project need and benefits in order to accurately consider them in light of the potential environmental impacts.	Section 2.1, Project Overview Section 2.2, Project Objectives
	Explain the objective(s) and/or purpose and need for implementing the Project.	Section 2.1, Overview

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
2.2 Project Objectives	Include an analysis of the reason why attainment of these objectives is necessary or desirable. Such analysis must be sufficiently detailed to inform the Commission in its independent formulation of Proposed Project objectives which will aid any appropriate CEQA alternatives screening process.	Section 2.2, Project Objectives
Chapter 3, Project Description		
3.1 Project Location	Identify geographical location: County, City (provide Proposed Project location map[s])	Section 3.1, Project Location Figure 1.1 Proposed Project Location
	Provide a general description of land uses within the Proposed Project site (e.g., residential, commercial, agricultural, recreation, vineyards, farms, open space, number of stream crossings, etc.).	Section 3.1, Project Location Section 4.10, Land Use and Planning Table 4.10-1 Planned Land Use Designations and Zoning by Proposed Project Component
	Describe if the Proposed Project is located within an existing property owned by the Applicant, traverses existing rights-of-way (ROW), or requires new ROW. Provide the approximate area of the property or the length of the Proposed Project that is in an existing ROW or which requires new ROWs.	Section 3.1, Project Location Section 3.6, Right-of-Way Requirements
3.2 Existing System	Describe the local system to which the Proposed Project relates. Include all relevant information about substations, transmission lines, and distribution circuits.	Section 3.2, Existing System

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Provide a schematic diagram and map of the existing system.	Figure 3.1-A Existing System Valley South 115 kV Configuration
	Provide a schematic diagram that illustrates the system as it would be configured with the implementation of the Proposed Project.	Figure 3.1-B Proposed System Valley South 115 kV Configuration
3.3 Project Objectives	Can refer to Chapter 2, Project Purpose and Need, if already described there.	Section 2.2, Project Objectives
3.4 Proposed Project	Describe the whole of the Proposed Project. Is it an upgrade, a new line, new substations, etc.?	Section 3.4, Proposed Project
	Describe how the Proposed Project fits into the regional system. Does it create a loop for reliability, etc.?	Section 3.4.1, Project Capacity
	Describe all reasonably foreseeable future phases or other reasonably foreseeable consequences of the Proposed Project.	Section 3.4.1, Project Capacity
	Provide the capacity increase in megawatts (MW). If the Proposed Project does not increase capacity, state that.	Section 3.4.1, Project Capacity
	Provide geographic information system (GIS) (or equivalent) data layers for the Proposed Project preliminary engineering, including estimated locations of all physical components of the Proposed Project, as well as those related to construction.	Provided under separate cover
3.5 Project Components 3.5.1 Transmission Line	Describe what type of line exists and what type of line is proposed (e.g., single-circuit, double-circuit, upgrade 69 kV to 115 kV).	Section 3.5, Project Components

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Identify the length of the upgraded alignment, the new alignment, etc.	Section 3.5, Project Components
	Describe whether construction would require one-for-one pole replacement, new poles, steel poles, etc.?	Section 3.5, Project Components
	Describe what would occur to other lines and utilities that may be collocated on the poles to be replaced (e.g., distribution, communication, etc.).	Section 3.5, Project Components
3.5.2 Poles/Towers	Provide information for each pole/tower that would be installed and for each pole/tower that would be removed.	Figure 3.2 Subtransmission Source Line Route Description Table 3.5 Subtransmission Approximate Land Disturbance
	Provide a unique identification number to match GIS database information.	Provided under separate cover
	Provide a structural diagram and, if available, photos of existing structure. Preliminary diagram or "typical" drawings and, if possible, photos of proposed structure. Also provide a written description of the most common types of structures and their use (e.g., tangent poles would be used when the run of poles continues in a straight line, etc.). Describe if the pole/tower design meets raptor safety requirements.	Figure 3.3 Typical Subtransmission Structures Section 3.5.2.2, 115 kV Subtransmission Poles/Towers
	Provide the type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting, lattice, etc.).	Section 3.5.2, Poles/Towers

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Identify typical total pole lengths, the approximate length to be embedded, and the approximate length that would be above ground surface; for towers, identify the approximate height above ground surface and approximate base footprint area.	Section 3.5.2, Poles/Towers
	Describe any specialty poles or towers; note where they would be used (e.g., angle structures, heavy angle lattice towers, stub guys, etc.); make sure to note if any guying would likely be required across a road.	Section 3.5.2, Poles/Towers
	If the Proposed Project includes pole-for-pole replacement, describe the approximate location of where the new poles would be installed relative to the existing alignment.	Section 3.5.2, Poles/Towers
	Describe any special pole types (e.g., poles that require foundations, transition towers, switch towers, microwave towers, etc.) and any special features.	Section 3.5.2, Poles/Towers
3.5.3 Conductor/Cable 3.5.3.1 Above-Ground Installation	Describe the type of line to be installed on the poles/tower (e.g. single-circuit with distribution, double circuit, etc.).	Section 3.5.3.1, Above-Ground Installation
	Describe the number of conductors required to be installed on the poles or tower and the number on each side, including applicable engineering design standards.	Section 3.5.3.1, Above-Ground Installation

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Provide the size and type of conductor (e.g., aluminum conductor, steel reinforced, non-specular, etc.) and insulator configuration.	Section 3.5.3.1, Above-Ground Installation
	Provide the approximate distance from the ground to the lowest conductor and the approximate distance between the conductors (i.e., both horizontally and vertically). Provide specific information at highways, rivers, or special crossings.	Section 3.5.3.1, Above-Ground Installation
	Provide the approximate span lengths between poles or towers, note where different if distribution is present or not if relevant.	Section 3.5.3.1, Above-Ground Installation
	Determine whether other infrastructure would likely be collocated with the conductor (e.g., fiber optics, etc.); if so, provide conduit diameter of other infrastructure.	Section 3.5.3.1, Above-Ground Installation
3.5.3.2 Below Ground Installation	Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables).	Section 3.5.3.2, Below-Ground Installation
	Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system); provide the dimensions of the casing.	Section 3.5.3.2, Below-Ground Installation
	Provide an engineering 'typical' drawing of the duct bank and describe what types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).	Figure 3.4 Typical Subtransmission Duct Bank

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.5.4 Substation	Provide "typical" plan and profile views of the proposed substation and the existing substation if applicable.	Not applicable
	Describe the types of equipment that would be temporarily or permanently installed and provide details as to what the function/use of said equipment would be. Include information such as, but not limited to mobile substations, transformers, capacitors, and new lighting.	Section 3.5.4.23, Modifications to Existing Substations
	Provide the approximate or "typical" dimensions (width and height) of new structures including engineering and design standards that apply.	Section 3.5.4.23, Modifications to Existing Substations
	Describe the extent of the Proposed Project. Would it occur within the existing fence line, existing property line or would either need to be expanded?	3.5.4.23, Modifications to Existing Substations
	Describe the electrical need area served by the distribution substation.	Section 3.2, Existing System
3.6 Right-of-Way Requirements	Describe the ROW location, ownership, and width. Would the existing ROW be used or would new ROW be required?	Section 3.6, Right-of-Way Requirements
	If a new ROW is required, describe how it would be acquired and approximately how much land would be required (length and width).	Section 3.6, Right-of-Way Requirements
	List the properties likely to require acquisition.	Section 3.6, Right-of-Way Requirements

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.7 Construction 3.7.1 For All Projects 3.7.1.1 Staging Areas	Where would the main staging area(s) likely be located?	Section 3.7.1.1, Staging Areas
	Approximately how large would the main staging area(s) be?	Section 3.7.1.1, Staging Areas
	Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.).	Section 3.7.1.1, Staging Areas
	Describe what the staging area would be used for (e.g., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.).	Section 3.7.1.1, Staging Areas
	Describe how the staging area would be secured; would a fence be installed? If so, describe the type and extent of the fencing.	Section 3.7.1.1, Staging Areas
	Describe how power to the site would be provided if required (e.g., tap into existing distribution, use of diesel generators, etc.).	Section 3.7.1.1, Staging Areas
	Describe any grading activities and/or slope stabilization issues.	Section 3.7.1.1, Staging Areas
3.7.1.2 Work Areas	Describe known work areas that may be required for specific construction activities (i.e., pole assembly, hill side construction, etc.).	Section 3.7.1.2, Work Areas
	For each known work area, provide the area required (include length and width) and describe the types of activities that would be performed.	Section 3.7.1.2, Work Areas

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Identify the approximate location of known work areas in the GIS database.	Provided under separate cover
	Describe how the work areas would likely be accessed (e.g., construction vehicles, walk-in, helicopter, etc.).	Section 3.7.1.2, Work Areas
	If any site preparation is likely required, generally describe what and how it would be accomplished.	Section 3.7.1.2, Work Areas
	Describe any grading activities and/or slope stabilization issues.	Section 3.7.1.2, Work Areas
	Based on the information provided, describe how the site would be restored.	Section 3.7.1.2, Work Areas
3.7.1.3 Access Roads and/or Spur Roads	Describe the types of roads that would be used and/or would need to be created to implement the Proposed Project. Road types may include, but are not limited to: new permanent road; new temporary road; existing road that would have permanent improvements; existing road that would have temporary improvements; existing paved road; existing dirt/gravel road; and overland access.	Section 3.7.1.3, Access Roads and/or Spur Roads
	For road types that require preparation, describe the methods and equipment that would be used.	Section 3.7.1.3, Access Roads and/or Spur Roads
	Identify approximate location of all access roads (by type) in the GIS database.	Provided under separate cover
	Describe any grading activities and/or slope stabilization issues.	Section 3.7.1.3, Access Roads and/or Spur Roads

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.7.1.4 Helicopter Access	Identify which proposed poles/towers would be removed and/or installed using a helicopter.	Not applicable
	If different types of helicopters are to be used, describe each type (e.g., light, heavy, or sky crane) and what activities they would be used for.	Not applicable
	Provide information as to where the helicopters would be staged, where they would refuel, and where they would land within the Proposed Project site.	Not applicable
	Describe any Best Management Practices (BMPs) that would be employed to avoid impacts caused by use of helicopters, for example: air quality and noise considerations.	Not applicable
	Describe flight paths, payloads, hours of operations for known locations, and work types.	Not applicable
3.7.1.5 Vegetation Clearance	Describe the types of vegetation clearing that may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.).	Section 3.7.1.5, Vegetation Clearance
	Identify the preliminary location and provide an approximate area of disturbance in the GIS database for each type of vegetation removal.	Section 3.7.1.5, Vegetation Clearance
	Describe how each type of vegetation removal would be accomplished.	Section 3.7.1.5, Vegetation Clearance
	For removal of trees, distinguish between tree trimming as required under G.O.-95 and tree removal.	Section 3.7.1.5, Vegetation Clearance

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Describe the types and approximate number and size of trees that may need to be removed.	Section 3.7.1.5 ,Vegetation Clearance
	Describe the type of equipment typically used.	Table 3.11 Construction Equipment Description
3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction	Describe the areas of soil disturbance including estimated total areas and associated terrain type and slope. List all known permits required. For project sites of less than one acre, outline the BMPs that would be implemented to manage surface runoff. Things to consider include, but are not limited to: Erosion and sedimentation BMPs, vegetation removal and restoration, and/or hazardous waste, and spill prevention plans.	Section 3.7.1.6, Erosion and Sediment Control and Pollution Prevention during Construction
	Describe any grading activities and/or slope stabilization issues.	Section 3.7.4.1, Site Preparation and Grading
	Describe how construction waste (i.e., refuse, spoils, trash, oil, fuels, poles, pole structures, etc.) would be disposed.	Section 3.7.1.6, Erosion and Sediment Control and Pollution Prevention during Construction
3.7.1.7 Cleanup and Post-Construction Restoration	Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods). Things to consider, but are not limited to, restoration of natural drainage patterns, wetlands, vegetation, and other disturbed areas (i.e. staging areas, access roads, etc.).	Section 3.7.1.7, Cleanup and Post-Construction Restoration

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.7.2 Transmission Line Construction (Above Ground) 3.7.2.1 Pull and Tension Sites	Provide the general or average distance between pull and tension sites.	Section 3.7.2.1, Pull and Tension Sites
	Provide the area of pull and tension sites including the estimated length and width.	Section 3.7.2.1, Pull and Tension Sites
	According to the preliminary plan, identify the number of pull and tension sites that would be required, and their locations. Provide the location information in GIS.	Section 3.7.2.1, Pull and Tension Sites
	Describe the type of equipment that would be required at these sites.	Section 3.7.2.1, Pull and Tension Sites
	If conductor is being replaced, describe how it would be removed	Section 3.7.2.2.1, Pole and Foundation Removal
3.7.2.2 Pole Installation and Removal	Describe how the construction crews and their equipment would be transported to and from the pole site locations. Provide vehicle type, number of vehicles, estimated number of trips, and hours of operation.	Section 3.7.2.2, Pole Installation and Removal
	Describe the process of removing the poles and foundations.	Section 3.7.2.2, Pole Installation and Removal
	Describe what happens to the holes that the poles were in (i.e., reused or backfilled)?	Section 3.7.2.2, Pole Installation and Removal
	If the holes are to be backfilled, what type of fill would be used and where would it come from?	Section 3.7.2.2, Pole Installation and Removal
	Describe any surface restoration that would occur at the pole sites.	Section 3.7.2.2, Pole Installation and Removal

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Describe how the poles would be removed from the sites.	Section 3.7.2.2, Pole Installation and Removal
	If topping is required to remove a portion of an existing transmission pole that would now only carry distribution lines, describe the methodology to access and remove the tops of these poles. Describe any special methods that would be required to top poles that may be difficult to access, etc.	Section 3.7.2.2.2, Top Removal
	Describe the process of how the new poles/towers would be installed; specifically identify any special construction methods (e.g., helicopter installation) for specific locations or for different types of poles/towers.	Section 3.7.2.2, Pole Installation and Removal
	Describe the types of equipment and their use as related to pole/tower installation.	Table 3.10-A Subtransmission Construction Equipment and Workforce Estimates Table 3.11 Construction Equipment Description
	Describe the actions taken to maintain a safe work environment during construction (e.g., covering of holes/excavation pits, etc.).	Section 3.9.2, Worker Environmental Awareness Training
	Describe what would be done with soil that is removed from a hole/foundation site.	Section 3.7.2.2, Pole Installation and Removal

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	For any foundations required, provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc.	Section 3.7.2.2, Pole Installation and Removal
	Describe briefly how poles/towers and associated hardware are assembled.	Section 3.7.2.2, Pole Installation and Removal
	Describe how the poles/towers and associated hardware would be delivered to the site; would they be assembled off site and brought in or assembled on site?	Section 3.7.2.2, Pole Installation and Removal
	Provide the following information about pole/tower installation and associated disturbance area estimates: pole diameter for each pole type (e.g., wood, self-supporting steel, lattice, etc.), base dimensions for each pole type, auger hole depth for each pole type, permanent footprint per pole/tower, number of poles/towers by pole type, average work area around poles/towers by pole type (e.g., for old pole removal and new pole installation), and total permanent footprint for poles/towers.	Table 3.1 Typical Subtransmission Structures to be Installed Table 3.5 Subtransmission Approximate Land Disturbance
3.7.2.3 Conductor/Cable Installation	Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable.	Section 3.7.2.3, Conductor/Cable Installation
	Generally describe the conductor/cable splicing process.	Section 3.7.2.3, Conductor/Cable Installation

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	If vaults are required, provide their dimensions and approximate location/spacing along the alignment.	Section 3.5.3.2.2, Subtransmission Figure 3.5 Typical Subtransmission Vault
	Describe in what areas conductor/cable stringing/installation activities would occur.	Section 3.7.2.1, Pull and Tension Sites
	Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing, etc.).	Section 3.7.2.3.3, Guard Structures
3.7.3 Transmission Line Construction (Below Ground)	Describe the approximate dimensions of the trench (e.g., depth, width).	Section 3.7.3.1, Trenching
	Describe the methodology of making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.).	Section 3.7.3.1, Trenching
3.7.3.1 Trenching	Provide the total approximate cubic yardage of material to be removed from the trench, the amount to be used as backfill and the amount to subsequently be removed/disposed of off-site.	Section 3.7.3.1, Trenching
	Provide off-site disposal location, if known, or describe possible option(s).	Section 3.7.3.1, Trenching
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	Section 3.7.3.1, Trenching

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Describe if dewatering would be anticipated and, if so, how the trench would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed of.	Section 3.7.3.1, Trenching
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed as a result of trenching operations.	Section 3.7.3.1, Trenching
	If pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Section 3.7.3.1, Trenching
	Describe any standard BMPs that would be implemented.	Section 3.7.3.1, Trenching
3.7.3.2 Trenchless Techniques: Microtunnel, Bore and Jack, Horizontal Directional Drilling	Provide the approximate location of the sending and receiving pits.	Not applicable
	Provide the length, width and depth of the sending and receiving pits.	Not applicable
	Describe the methodology of excavating and shoring the pits.	Not applicable
	Describe the methodology of the trenchless technique.	Not applicable
	Provide the total cubic yardage of material to be removed from the pits, the amount to be used as backfill and the amount to subsequently be removed/disposed of offsite.	Not applicable

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Describe the process for safe handling of drilling mud and bore lubricants.	Not applicable
	Describe the process for detecting and avoiding "fracturing-out" during horizontal directional drilling operations.	Not applicable
	Describe the process for avoiding contact between drilling mud/lubricants and streambeds.	Not applicable
	If engineered fill would be used as backfill, provide information as to the type of engineered backfill and the amount that would be typically used (e.g., top two feet would be filled with thermal-select backfill).	Not applicable
	If dewatering is anticipated, describe how the pit would be dewatered, what the anticipated flows of the water are, whether there would be treatment, and how the water would be disposed of.	Not applicable
	Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants.	Not applicable
	If a pre-existing hazardous waste was encountered, describe the process of removal and disposal.	Not applicable
	Describe any grading activities and/or slope stabilization issues.	Not applicable
	Describe any standard BMPs that would be implemented.	Not applicable

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.7.4 Substation Construction	Describe any earth-moving activities that would be required; what type of activity and, if applicable, estimate cubic yards of materials to be reused and/or removed from the site for both site grading and foundation excavation.	Section 3.7.4.1, Site Preparation and Grading
	Provide a conceptual landscape plan in consultation with the municipality in which the substation is located.	Not applicable
	Describe any grading activities and/or slope stabilization issues.	Section 3.7.4.1, Site Preparation and Grading
	Describe possible relocation of commercial or residential property, if any.	Section 3.6, Right-of-Way Requirements
3.7.5 Construction Workforce and Equipment	Provide the estimated number of construction crew members.	Section 3.7.5, Construction Workforce and Equipment
	Describe the crew deployment, whether crews would work concurrently (i.e., multiple crews at different sites), if they would be phased, etc.	Section 3.7.5, Construction Workforce and Equipment
	Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e., trenching, grading, etc.), and the number and types of equipment expected to be used for said activity. Include a written description of the activity.	Section 3.7.5, Construction Workforce and Equipment
	Provide a list of the types of equipment expected to be used during construction of the Proposed Project as well as a brief description of the use of the equipment.	Section 3.7.6, Construction Workforce and Equipment

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
3.7.6 Construction Schedule	Provide a preliminary project construction schedule; include contingencies for weather, wildlife closure periods, etc.	Section 3.7.6, Construction Schedule
3.8 Operation and Maintenance	Describe the general system monitoring and control (i.e., use of standard monitoring and protection equipment, use of circuit breakers and other line relay protection equipment, etc.).	Section 3.8, Operation and Maintenance
	Describe the general maintenance program of the Proposed Project including timing of inspections (i.e., monthly, every July, as needed), type of inspection (i.e., aerial inspection, ground inspection), and a description of how the inspection would be implemented. Things to consider: who/how many crew members, how would they access the site (i.e., walk to site, vehicle, all-terrain vehicle), would new access be required, would restoration be required, etc.).	Section 3.8, Operation and Maintenance
	If additional full-time staff would be required for operation and/or maintenance, provide the number of workers and for what purpose they are required.	Not applicable
3.9 Applicant-Proposed Measures	If there are measures that the Applicant would propose to be part of the Proposed Project, include those measures and reference plans or implementation descriptions.	Section 3.9, Applicant Proposed Measures

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
Chapter 4, Environmental Setting		
	For each resource area discussion within the PEA, include a description of the physical environment in the vicinity of the Proposed Project (e.g., topography, land use patterns, biological environment, etc.), including the local environment (site-specific) and regional environment.	Chapter 4, Combined with the Environmental Impact Assessment Summary
	For each resource area discussion within the PEA, include a description of the regulatory environment/context (federal, state, and local).	Chapter 4, Combined with the Environmental Impact Assessment Summary
	Limit detailed descriptions to those resource areas which may be subject to a potentially significant impact.	Chapter 4, Combined with the Environmental Impact Assessment Summary

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
Chapter 5, Environmental Impact Assessment Summary		
5.1 Aesthetics	Provide visual simulations of prominent public view locations, including scenic highways, to demonstrate the views before and after project implementation. Additional simulations are highly recommended.	Figure 4.1-5 KOP 1 Figure 4.1-6 KOP 2 Figure 4.1-7 KOP 3 Figure 4.1-8 KOP 4 Figure 4.1-9 KOP 5 Figure 4.1-10 KOP 6 Figure 4.1-11 KOP 7 Figure 4.1-12 KOP 8 Figure 4.1-13 KOP 9 Figure 4.1-14 KOP 10 Figure 4.1-15 KOP 11 Figure 4.1-16 KOP 12 Figure 4.1-17 KOP 13
5.2 Agriculture Resources	Identify the types of agricultural resources affected.	Section 4.2, Agriculture Resources
5.3 Air Quality	Provide supporting calculations/ spreadsheets/technical reports that support emission estimates in the PEA.	Appendix E, Construction Emissions Calculations
	Provide documentation of the location and types of sensitive receptors that could be impacted by the Project (e.g., schools, hospitals, houses, etc.). Critical distances to receptors are dependent on type of construction activity.	Section 4.3, Air Quality

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Identify Proposed Project GHG emissions.	Appendix E, Construction Emissions Calculations and Section 4.7, Greenhouse Gas Emissions
	Quantify GHG emissions from a business as usual snapshot. That is what the GHG emissions will be from the Proposed Project if no mitigations were used.	Appendix E, Construction Emissions Calculations and Section 4.7, Greenhouse Gas Emissions
	Quantify GHG emission reductions from every APM that is implemented. The quantifications will be itemized and placed in tabular format.	Not applicable
	Identify the net emissions of the Proposed Project after mitigation has been applied.	Not applicable
	Calculate and quantify GHG emissions (Carbon dioxide equivalent) for the Proposed Project, including construction and operation.	Appendix E, Construction Emissions Calculations and Section 4.7, Greenhouse Gas Emissions
	Calculate and quantify the GHG reduction based on reduction measures proposed for the Proposed Project.	Not applicable
	Propose APMs to implement and follow to maximize GHG reductions. If sufficient, CPUC will accept them without adding further mitigation measures.	Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Discuss programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the U.S. Environmental Protection Agency (EPA) SF6 reduction program, reductions from energy efficiency, demand response, long-term procurement plan, etc.	Section 4.7, Greenhouse Gas Emissions
	Ensure that the assessment of air quality impacts is consistent with PEA Section 3.7.5, as well as with the PEAs analysis of impacts during construction, including traffic and all other emissions.	Section 4.3, Air Quality
5.4 Biological Resources	Provide a copy of the Wetland Delineation and supporting documentation (i.e., data sheets). If verified, provide supporting documentation. Additionally, GIS data of the wetland features should be provided as well.	Appendix F, Biological Resources Assessment
	Provide a copy of special-status surveys for wildlife, botanical and aquatic species, as applicable. Any GIS data documenting locations of special-status species should be provided.	Appendix F, Biological Resources Assessment and GIS provided under separate cover
5.5 Cultural Resources	Cultural Resources Report documenting a cultural resources investigation of the Proposed Project. This report should include a literature search, pedestrian survey, and Native American consultation.	Provided under separate confidential cover
	Provide a copy of the records found in the literature search.	Provided under separate confidential cover

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Provide a copy of all letters and documentation of Native American consultation.	Appendix C, Agency Consultation
5.6 Geology, Soils, and Seismic Potential	Provide a copy of the geotechnical investigation if completed, including known and potential geologic hazards such as ground shaking, subsidence, liquefaction, etc.	Not applicable
5.7 Hazards and Hazardous Materials	Include an Environmental Data Resources report.	Appendix G, EDR Report
	Include a Hazardous Substance Control and Emergency Response Plan, if required.	Not applicable
	Include a Health and Safety Plan, if required.	Not applicable
	Describe the Worker Environmental Awareness Program.	Section 3.9.2, Worker Environmental Awareness Training
	Describe which chemicals would be used during construction and operation of the Proposed Project. For example, fuels for construction, naphthalene to treat wood poles before installation, etc.	Section 4.8, Hazards and Hazardous Materials
5.8 Hydrology and Water	Describe impacts to groundwater quality including increased runoff due to construction of impermeable surfaces, etc.	Section 4.9, Hydrology and Water
	Describe impacts to surface water quality including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.	Section 4.9, Hydrology and Water

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
5.9 Land Use and Planning	Provide GIS data of all parcels within 300 feet of the Proposed Project with the following data: APN number, mailing address, and parcel's physical address.	Provided under separate cover
5.10 Mineral Resources	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Section 4.11, Mineral Resources
5.11 Noise	Provide long-term noise estimates for operational noise (e.g., corona discharge noise, and station sources such as substations, etc.).	Section 4.12, Noise
5.12 Population and Housing	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Section 4.13, Population and Housing
5.13 Public Services	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Section 4.14, Public Services
5.14 Recreation	Data needs already specified under Chapter 3 would generally meet the data needs for this resource area.	Section 4.15, Recreation
5.15 Transportation and Traffic	Discuss traffic impacts resulting from construction of the Proposed Project including ongoing maintenance operations.	Section 4.16, Transportation and Traffic
	Provide a preliminary description of the traffic management plan that would be implemented during construction of the Proposed Project.	Section 4.16, Transportation and Traffic
5.16 Utilities and Services Systems	Describe how treated wood poles would be disposed of after removal, if applicable.	Section 4.17, Utilities and Services

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
5.17 Cumulative Analysis	Provide a list of projects (i.e., past, present, and reasonably foreseeable future projects) within the Proposed Project area that the applicant is involved in.	Section 4.18, Cumulative Analysis
	Provide a list of projects that have the potential to be proximate in space and time to the Proposed Project. Agencies to be contacted include, but are not limited to, the local planning agency, Caltrans, etc.	Section 4.18, Cumulative Analysis
5.18 Growth-Inducing Impacts, If Significant	Provide information on the Proposed Project's growth- inducing impacts, if any.	Section 4.19, Growth-Inducing Impacts, and Section 5.3, Growth-Inducing Impacts
	Provide information on any economic or population growth in the surrounding environment that will, directly or indirectly, result from the Proposed Project.	Section 4.19, Growth-Inducing Impacts, and Section 5.3, Growth-Inducing Impacts
	Provide information on any increase in population that could further tax existing community service facilities (e.g., schools, hospitals, fire, police, etc.), that will directly or indirectly result from the Proposed Project.	Section 4.19, Growth-Inducing Impacts and Section 5.3, Growth-Inducing Impacts
	Provide information on any obstacles to population growth that the Proposed Project would remove.	Section 4.19, Growth-Inducing Impacts, and Section 5.3, Growth-Inducing Impacts

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	Describe any other activities, directly or indirectly encouraged or facilitated by the Proposed Project that would cause population growth that could significantly affect the environment, either individually or cumulatively.	Section 4.19, Growth-Inducing Impacts, and Section 5.3, Growth-Inducing Impacts
Chapter 6, Detailed Discussion of Significant Impacts		
6.1 Mitigation Measures Proposed to Minimize Significant Effects	Discuss each mitigation measure and the basis for selecting a particular mitigation measure should be stated.	Section 5.1, Applicant Proposed Measures to Minimize Significant Effects
6.2 Description of Project Alternatives and Impact Analysis	Provide a summary of the alternatives considered that would meet most of the objectives of the Proposed Project and an explanation as to why they were not chosen as the Proposed Project.	Section 5.2, Description of Project Alternatives and Impact Analysis
	Alternatives considered and described by the Applicant should include, as appropriate, system or facility alternatives, route alternatives, route variations, and alternative locations.	Section 5.2, Description of Project Alternatives and Impact Analysis
	A description of a "No Project Alternative" should be included.	Section 5.2, Description of Project Alternatives and Impact Analysis
	If significant environmental effects are assessed, the discussion of alternatives shall include alternatives capable of substantially reducing or eliminating any said significant environmental effects, even if the alternative(s) substantially impede the attainment of the Proposed Project objectives and are more costly.	Section 5.2, Description of Project Alternatives and Impact Analysis

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
6.3 Growth-Inducing Impacts	Discuss if the Proposed Project would foster economic or population growth, either directly or indirectly, in the surrounding environment.	Section 5.3, Growth-Inducing Impacts
	Discuss if the Proposed Project would cause an increase in population that could further tax existing community services (e.g., schools, hospitals, fire, police, etc.).	Section 5.3, Growth-Inducing Impacts
	Discuss if the Proposed Project would remove obstacles to population growth.	Section 5.3, Growth-Inducing Impacts
	Discuss if the Proposed Project would encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively.	Section 5.3, Growth-Inducing Impacts
6.4 Suggested Applicant-Proposed Measures to address GHG Emissions	Include a menu of suggested APMs that applicants can consider to address GHG emissions. Suggested APMs include, but are not limited to:	Section 5.4, Suggested Applicant Proposed Measures to Address GHG Emissions Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	1. If suitable park-and-ride facilities are available in the Project vicinity, construction workers will be encouraged to carpool to the job site to the extent feasible. The ability to develop an effective carpool program for the Proposed Project would depend upon the proximity of carpool facilities to the job site, the geographical commute departure points of construction workers, and the extent to which carpooling would not adversely affect worker show-up time and the Project's construction schedule.	If applicable, Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	2. To the extent feasible, unnecessary construction vehicle and idling time will be minimized. 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. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following startup. Where such diesel powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The Proposed Project will apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. Construction foremen will include briefings to crews on vehicle use as part of pre-construction conferences. Those briefings will include discussion of a "common sense" approach to vehicle use.	If applicable, Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	3. Use low-emission construction equipment. Maintain construction equipment per manufacturing specifications and use low-emission equipment described here. All off-road construction diesel engines not registered under the California Air Resources Board (CARB) Statewide Portable Equipment Registration Program 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, Sec. 2423(b)(1).	If applicable, Section 4.7, Greenhouse Gas Emissions
	4. Diesel Anti-Idling: In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling.	If applicable, Section 4.7, Greenhouse Gas Emissions
	5. Alternative Fuels: CARB would develop regulations to require the use of one to four-percent biodiesel displacement of California diesel fuel.	If applicable, Section 4.7, Greenhouse Gas Emissions
	6. Alternative Fuels: Ethanol, increased use of ethanol fuel	If applicable, Section 4.7, Greenhouse Gas Emissions
	7. Green Buildings Initiative	If applicable, Section 4.7, Greenhouse Gas Emissions
	8. Facility-wide energy efficiency audit	If applicable, Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	9. Complete GHG emissions audit. The audit will include a review of the GHG emitted from those facilities (substations), including carbon dioxide, methane, CFC, and HFC compounds (SF_6).	If applicable, Section 4.7, Greenhouse Gas Emissions
	10. There is an EPA approved SF_6 emissions protocol (http://www.epa.gov/electricpowersf6/resources/index.html#three).	If applicable, Section 4.7, Greenhouse Gas Emissions
	11. SF_6 program-wide inventory. For substations, keep inventory of leakage rates.	If applicable, Section 4.7, Greenhouse Gas Emissions
	12. Increase replacement of breakers once leakage rates exceed one percent within 30 days of detection.	If applicable, Section 4.7, Greenhouse Gas Emissions
	13. Increased investment in current programs that can be verified as being in addition to what the utility is already doing.	If applicable, Section 4.7, Greenhouse Gas Emissions
	14. The SF_6 Emission Reduction Partnership for the Electric Power Systems was launched in 1999 and currently includes 57 electric utilities and local governments across the U.S.	If applicable, Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
	15. SF_6 is used by this industry in a variety of applications, including that of dielectric-insulating material in electrical transmission and distribution equipment, such as circuit breakers. Electric power systems that join the Partnership must, within 18 months, establish an emission reduction goal reflecting technically and economically feasible opportunities within their company. They also agree to, within the constraints of economic and technical feasibility, estimate their emissions of SF_6, establish a strategy for replacing older, leakier pieces of equipment, implement SF_6 recycling, establish and apply proper handling techniques, and report annual emissions to the EPA. The EPA works as a clearinghouse for technical information, works to obtain commitments from all electric power system operators and will be sponsoring an international conference in 2000 on SF_6 emission reductions.	If applicable, Section 4.7, Greenhouse Gas Emissions
	16. Quantify what comes into the system and track programmatically SF_6.	If applicable, Section 4.7, Greenhouse Gas Emissions
	17. Applicant can propose other GHG reducing mitigations.	If applicable, Section 4.7, Greenhouse Gas Emissions

Location in CPUC Checklist	Checklist Item	Location in PEA and any Associated Notes
Chapter 7, Other Process-Related Data Needs		
Noticing	Include an excel spreadsheet that identifies all parcels within 300 feet of any Proposed Project component with the following data: APN number, owner mailing address, and parcels physical address.	Provided under separate cover as stated in *Chapter 6 Other Process-Related Needs*

Chapter 2
Project Purpose and Need and Objectives

This section defines objectives, purpose, and need for the Southern California Edison (SCE) proposed Valley South 115 kilovolt (kV) Subtransmission Project (Proposed Project), as required in the California Public Utilities Commission's (CPUC) "State of California Public Utilities Commission Information and Criteria List, Appendix B, Section V;" the CPUC's "Working Draft Proponent's Environmental Assessment (PEA) Checklist for Transmission Line and Substation Projects" dated November 2008; the California Environmental Quality Act (CEQA) Guidelines (Title 14, California Code of Regulation Section 15000 *et seq.*); and the CPUC's requirements for a Permit to Construct (PTC) pursuant to General Order (G.O.) 131-D (D.94-06-014, Appendix A, as modified by D.95-08-038). The CPUC requires applicants to provide this information for review to assist the CPUC in complying with the mandates of CEQA. This PEA is designed to meet the above-mentioned CPUC requirements.

2.1 Overview

SCE is a public utility that provides electric service to a population of approximately 14 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California. SCE's Proposed Project would:

1) Serve long-term peak electrical demand requirements inside and adjacent to the Electrical Needs Area (ENA) as soon as possible after receipt of applicable permits
2) Enhance electrical system reliability and operational flexibility
3) Meet Proposed Project need while minimizing environmental impacts; and
4) Be designed and constructed in conformance with SCE's current engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects in the ENA. Figure 1.2 Electrical Needs Area shows the location of the Proposed Project in relation to the larger regional area.

The Proposed Project would include the following major components:

- Modification of SCE's existing Valley 500/115 kV Substation, which would include equipping an existing 115 kV line position and providing protection equipment as required
- Construction of a new 115 kV subtransmission line approximately 12 miles in length originating at SCE's existing Valley 500/115 kV Substation and terminating at a tubular steel pole (TSP)
- Replacement of approximately 3.4 miles of existing conductor from the preceding TSP to an existing TSP
- Relocation of existing distribution and telecommunication lines required to support the installation of the new 115 kV subtransmission line

- Installation of telecommunications facilities to connect the Proposed Project to SCE's existing telecommunication system

2.2 Project Objectives

The Proposed Project is being proposed to meet the following fundamental objectives:

- Provide safe and reliable electrical service
- Add capacity to serve long-term forecasted electrical demand requirements in the ENA as soon as possible after receipt of applicable permits
- Maintain or improve system reliability and provide greater operational flexibility within the ENA
- Meet Proposed Project needs while minimizing environmental impacts
- Design and construct the Proposed Project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects

The Proposed Project components, location, preliminary configuration, and the existing and proposed components, are presented in Chapter 3, Project Description. Each of the Proposed Project objectives is more thoroughly described as follows.

Provide safe and reliable electrical service

Under the Federal Energy Regulatory Commission (FERC), North American Electric Reliability Corporation (NERC), Western Electricity Coordinating Council (WECC), and CPUC rules, guidelines and regulations, SCE has the responsibility to ensure that electrical transmission, subtransmission, and distribution systems have sufficient capacity to maintain safe, reliable, and adequate service to customers. To ensure the availability of safe and reliable electric service, SCE has established a set of criteria by which it determines when new projects are needed. The safety and reliability of the systems must be maintained under normal conditions when all facilities are in service, and also maintained under abnormal conditions when facilities are out of service due to equipment or line failures, maintenance outages, or outages that cannot be predicted or controlled which are caused by weather, earthquakes, traffic accidents, and other unforeseeable events.

SCE's annual subtransmission system studies are performed to ensure that there is adequate capacity to provide electrical service during peak electrical demand periods both under normal system conditions (when all subtransmission lines are in service) and under specific abnormal system conditions (when any one subtransmission line is out of service). Power flow studies of a network of subtransmission lines evaluate the specific power flows that occur on the lines within the network and the power flow values that result are dictated by the electrical demand values of the distribution substations served by the subtransmission lines and the characteristics of the power lines themselves (e.g., impedance of the lines). When studies determine there is insufficient capacity to provide service and prevent overloads from occurring, a project is identified to address the projected overload and stay within specified operating limits.

The Proposed Project would provide safe and reliable electrical service by providing additional capacity to serve the ENA for the foreseeable future.

Add capacity to serve long-term forecasted electrical demand requirements in the Electrical Needs Area as soon as possible after receipt of applicable permits

The Valley South 115 kV subtransmission system is a network of 115 kV power lines that provide electrical service to the distribution[1] substations located within the ENA. The amount of electrical power that can be delivered to the ENA is limited to the maximum amount of electrical demand that the Valley-Sun City, Valley-Auld, and Valley-Auld-Triton 115 kV Subtransmission Lines can provide before any individual subtransmission line's maximum operating capacity limit is exceeded. Each of the 115 kV subtransmission lines providing service to the ENA has operating limits of 218 mega volt-amperes (MVA)[2] under normal system conditions and 294 MVA under abnormal system conditions.[3]

In 2016, under peak electrical demand conditions and abnormal system conditions (e.g., an outage to either of the Valley-Auld or Valley-Sun City 115 kV Subtransmission Lines) the Valley-Auld or Valley-Sun City 115 kV Subtransmission Line is projected to exceed its maximum operating limit. In addition to the abnormal condition overloads identified above, if the Proposed Project is not constructed, then under peak electrical demand conditions and a normal system configuration, the maximum operating limit of the Valley-Sun City 115 kV Subtransmission Line is projected to be exceeded beginning in 2018.

As noted above, one of SCE's Project Objectives is to add capacity to serve long-term forecasted electrical demand requirements in the ENA as soon as possible after receipt of applicable permits. Due to an assumed 26-month CPUC regulatory review and a 16-month anticipated construction schedule, the Proposed Project is not expected to be operational until 2020. Since the Proposed Project is not anticipated to be operational by 2016, a mitigation plan would be required in order to minimize the amount of electrical demand at risk, which is described in more detail below.

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[1] Typical voltage level designations for various levels of SCE's electrical grid are as follows: transmission voltages are 200 kV and above, subtransmission voltages are between 50 kV and 200 kV, and distribution voltages are those below 50 kV.

[2] Throughout this PEA document, SCE has utilized megavolt-ampere (MVA) as the unit of measure rather than megawatt (MW) which represents electrical facility capacity ratings and electrical demand values. Most major electrical facilities have capacity ratings and electrical demand values provided in units that are either MVA and/or amps. Alternating Current (AC) power has two components: MW and megavars (MVAR) which together represent the total power (or burden on electrical facilities) in MVA. At a specific system operating voltage, power can be represented by MVA and can be easily converted to amps for use in comparing electrical facility capacity ratings to electrical demand values. In the interest of consistency and simplicity, the unit MVA was selected to represent all electrical facility capacity ratings and electrical demand values as it captures the MVAR component, whereas, the MW unit does not. Use of only MW to represent capacity ratings or electrical demand is understating the true capacity of the electrical facility or burden of the electrical demand.

[3] Under abnormal system conditions of the 115 kV subtransmission system, the remaining 115 kV source lines are permitted to operate at a higher rating (termed "N-1 capacity limit") for a limited period of time to allow for continuity of electrical service while repairs are performed on the out-of-service line.

The permanent solution that addresses both the abnormal and normal system condition overloads is the construction of the Valley South 115 kV Subtransmission Project, which results in the formation of the Valley-Auld No. 2 and Valley-Triton 115 kV Subtransmission Lines.

Table 2.1 Electrical Needs Area 115 kV Subtransmission Line Capacity and Peak Demand – Abnormal System Conditions shows the maximum operating limit and criteria projected demand values for the Valley-Auld, Valley-Sun City, and Valley-Auld-Triton 115 kV Subtransmission Lines (only the highest overload condition shown) during specific outages of the Valley-Auld, Valley-Sun City, and Valley-Auld-Triton 115 kV Subtransmission Lines. Table 2.2 Electrical Needs Area 115 kV Subtransmission Line Capacity and Peak Demand – Normal Conditions shows the maximum operating limit and criteria projected demand value for the Valley-Auld, Valley-Sun City, and Valley-Auld-Triton 115 kV Subtransmission Lines with all facilities in service. Figures 2.1, 2.2, and 2.3 are graphical representations of the data in Tables 2.1 and 2.2.

The Proposed Project is expected to add sufficient additional 115 kV subtransmission line capacity to serve long-term forecasted electrical demand requirements in the ENA as soon as possible after receipt of applicable permits.

Table 2.1 Electrical Needs Area 115 kV Subtransmission Line Capacity and Peak Demand – Abnormal Conditions

			Year				
			2014	2015	2016	2017	2018
			Line Capacity (MVA)				
115 kV Line	Line Outage	N-1	294	294	294	294	294
Valley-Auld-Triton	Valley-Sun City	Line Loading (MVA)	270	278	287	288	295
		Utilization	92%	95%	98%	98%	100%
	Valley-Auld	Line Loading (MVA)	270	278	286	287	296
		Utilization	92%	95%	97%	98%	101%
Valley-Sun City	Valley-Auld	Line Loading (MVA)	281	290	299	302	312
		Utilization	96%	99%	102%	103%	106%
	Valley-Auld-Triton	Line Loading (MVA)	271	279	287	292	299
		Utilization	92%	95%	98%	99%	102%
Valley-Auld	Valley-Sun City	Line Loading (MVA)	282	290	299	301	308
		Utilization	96%	99%	102%	102%	105%
	Valley-Auld-Triton	Line Loading (MVA)	270	278	285	288	293
		Utilization	92%	95%	97%	98%	100%

			Year				
			2019	2020	2021	2022	2023
			Line Capacity (MVA)				
115 kV Line	Line Outage	N-1	294	294	294	294	294
Valley-Auld-Triton	Valley-Sun City	Line Loading (MVA)	307	314	321	329	335
		Utilization	104%	107%	109%	112%	114%
	Valley-Auld	Line Loading (MVA)	305	311	319	326	332
		Utilization	104%	106%	109%	111%	113%
Valley-Sun City	Valley-Auld	Line Loading (MVA)	318	326	335	342	347
		Utilization	108%	111%	114%	116%	118%
	Valley-Auld-Triton	Line Loading (MVA)	310	319	326	334	340
		Utilization	105%	109%	111%	114%	116%
Valley-Auld	Valley-Sun City	Line Loading (MVA)	315	324	331	339	345
		Utilization	107%	110%	113%	115%	117%
	Valley-Auld-Triton	Line Loading (MVA)	305	312	318	327	333
		Utilization	104%	106%	108%	111%	113%

Table 2.2 Electrical Needs Area 115 kV Subtransmission Line Capacity and Peak Demand – Normal Conditions

		Year				
		2014	2015	2016	2017	2018
		Line Capacity (MVA)				
115 kV Line	Base Case	218	218	218	218	218
Valley-Auld-Triton	Line Loading (MVA)	186	191	196	198	203
	Utilization	85%	88%	90%	91%	93%
Valley-Sun City	Line Loading (MVA)	202	208	215	217	225
	Utilization	93%	95%	99%	100%	**103%**
Valley-Auld	Line Loading (MVA)	192	198	203	205	210
	Utilization	88%	91%	93%	94%	96%

		Year				
		2019	2020	2021	2022	2023
		Line Capacity (MVA)				
115 kV Line	Base Case	218	218	218	218	218
Valley-Auld-Triton	Line Loading (MVA)	206	211	215	221	225
	Utilization	94%	97%	99%	**101%**	**103%**
Valley-Sun City	Line Loading (MVA)	228	234	240	245	249
	Utilization	**105%**	**107%**	**110%**	**112%**	**114%**
Valley-Auld	Line Loading (MVA)	212	218	221	227	232
	Utilization	97%	100%	**101%**	**104%**	**106%**

Figure 2.1 115 kV Subtransmission Source Line Capacity and Peak Demand – Valley-Auld

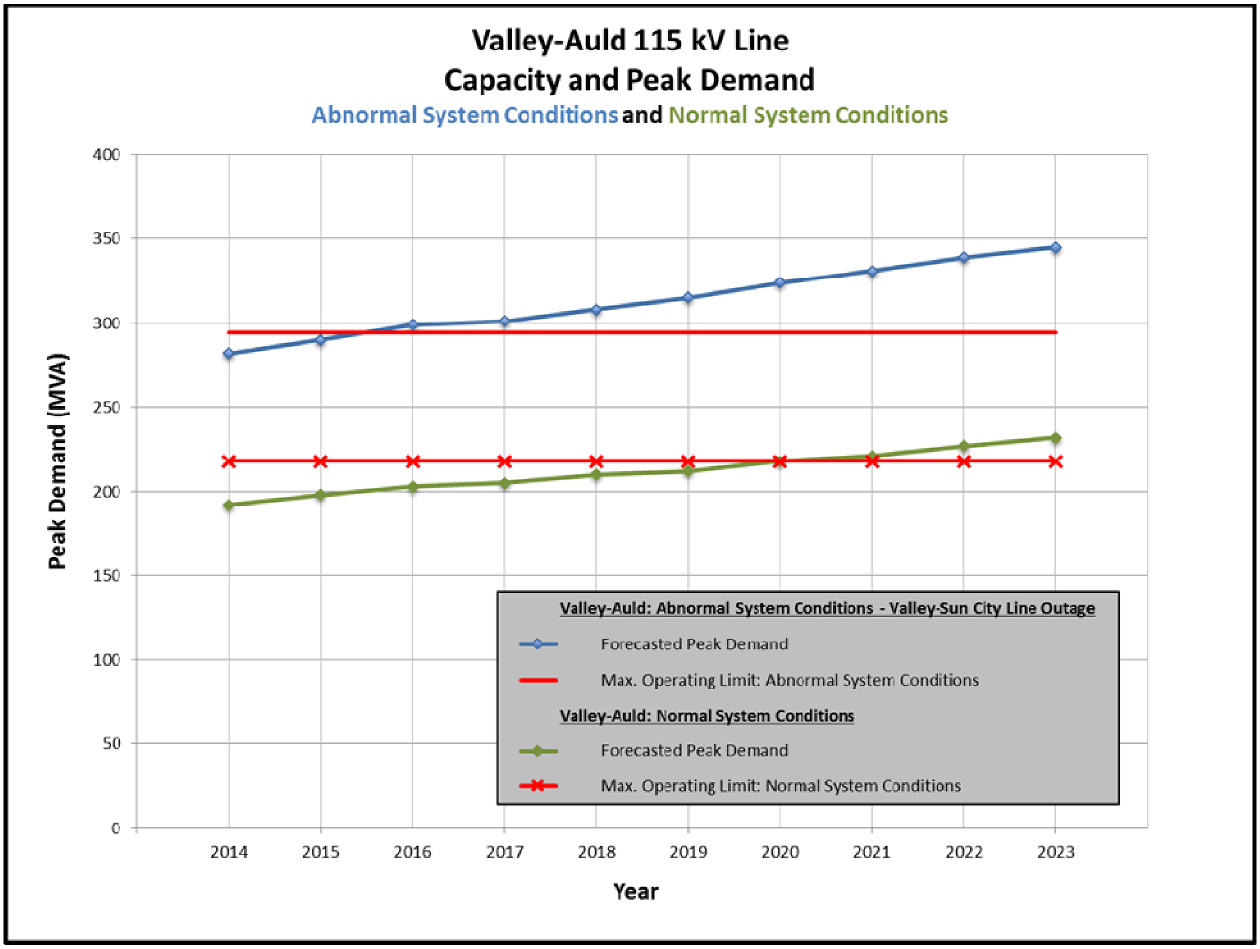


Figure 2.2 115 kV Subtransmission Source Line Capacity and Peak Demand – Valley-Sun City

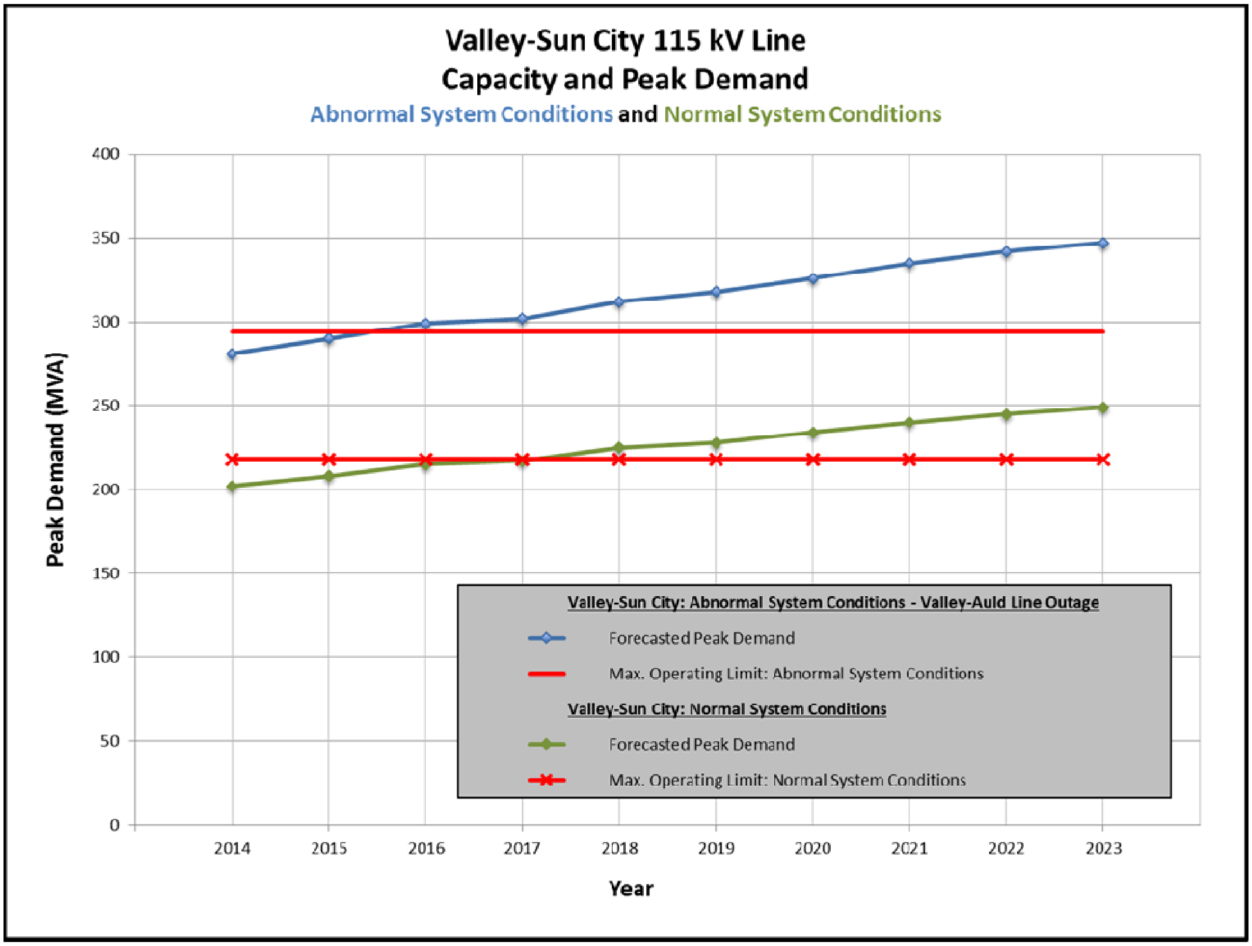
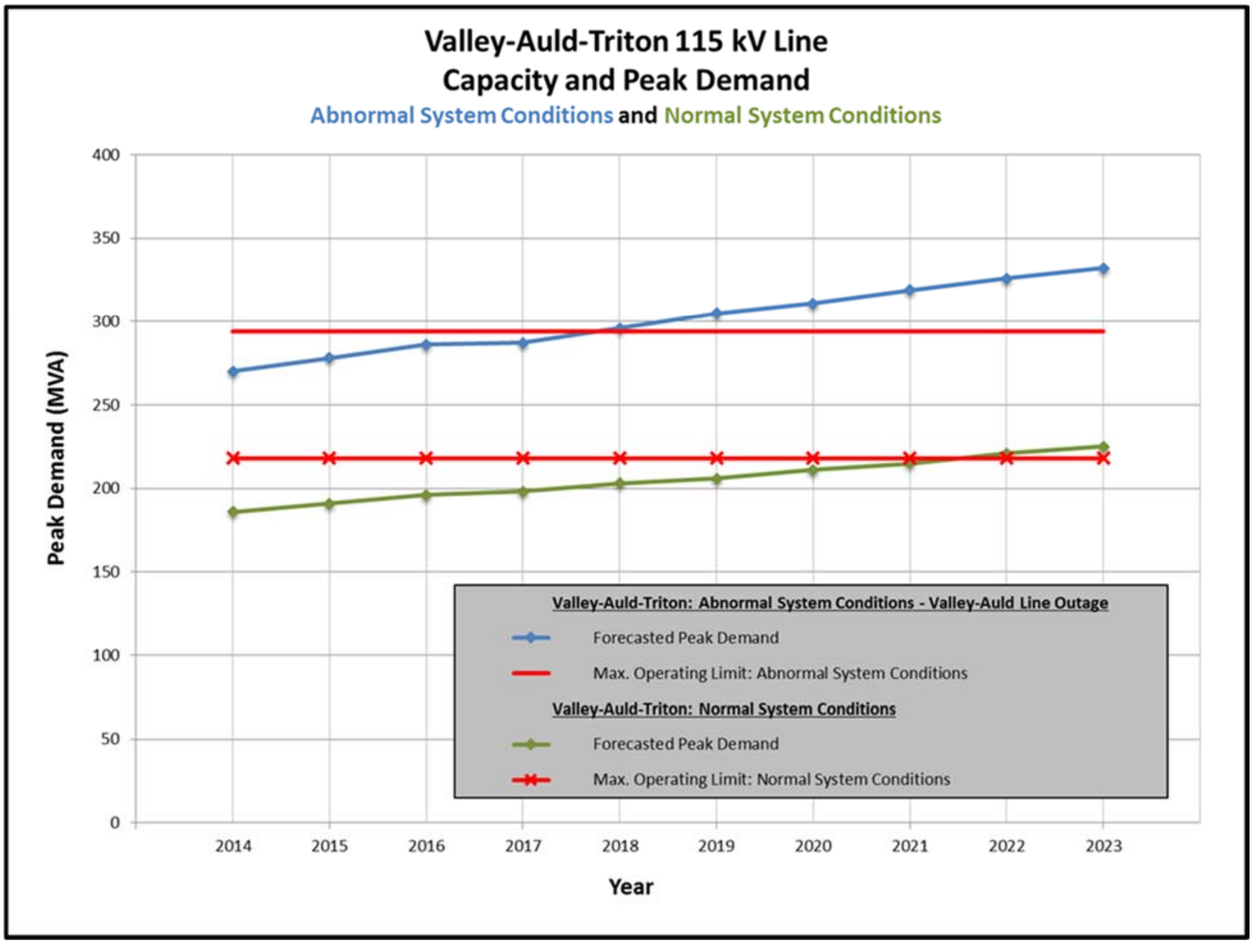


Figure 2.3 115 kV Subtransmission Source Line Capacity and Peak Demand – Valley-Auld-Triton



The Proposed Project is needed in 2016. For the years 2016 through 2019, there is electrical demand at risk of interruption during peak electrical demand conditions. Reduction in electrical demand at distribution substations within the ENA would be required to sufficiently decrease the loading of the remaining in-service 115 kV subtransmission lines allowing the lines to stay within maximum operating limits.

During peak electrical demand and abnormal conditions, a mitigation plan has been identified that would be effective in reducing the amount of electrical demand at risk. This mitigation plan would be to temporarily implement a system operating procedure that would manually open a circuit breaker at the terminal of another line within the Valley South 115 kV System. This would be considered a temporary abnormal condition (two 115 kV subtransmission system elements out of service) and would result in a redirection of power flow. This would reduce the amount of power delivered by the 115 kV subtransmission lines that would otherwise be overloaded and all 115 kV subtransmission lines would stay within operating limits. This mitigation plan would only be utilized as needed because while it addresses the immediate need of preventing an overload or reducing electrical demand at risk, it results in a system that would temporarily have two of its 115 kV subtransmission lines out of service (one unplanned and one intentionally). The mitigation plan would eliminate the electrical demand at risk in 2016, however, it only reduces (and does not eliminate) the electrical demand at risk in 2017, 2018, and 2019.

The amount of electrical demand at risk is shown in Table 2.3 Electrical Demand and Risk.

Table 2.3 Electrical Demand and Risk

Year	N-1 Conditions		Basecase Conditions	
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation
2016	5 MVA	0 MVA	0 MVA	0 MVA
2017	10 MVA	5 MVA	0 MVA	0 MVA
2018	25 MVA	15 MVA	10 MVA	0 MVA
2019	40 MVA	30 MVA	15 MVA	15 MVA

Maintain or improve system reliability and provide greater operational flexibility within the Electrical Needs Area

In addition to the benefits of increased capacity to serve existing and long-term projected electrical demand in the ENA, the Proposed Project also serves to maintain or improve system reliability and operational flexibility. Currently the electrical needs of the ENA are primarily served by three 115 kV subtransmission lines (Valley-Sun City, Valley-Auld, and Valley-Auld-Triton 115 kV Subtransmission Lines). The new subtransmission line would provide increased system reliability under both planned and unplanned line outages. System operators would have increased operational flexibility allowing additional opportunities to coordinate planned outages and to restore electrical service during unplanned outages. The additional subtransmission line would also provide increased voltage support to the system within the ENA.

Meet project needs while minimizing environmental impacts

CEQA and the CEQA Guidelines (Title 14, California Code of Regulations Section 15000, *et seq.)* require that an environmental impact report describe a reasonable range of alternatives to a proposed project, or 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. CEQA Guidelines Section 15126.6(d) requires that sufficient information about each alternative be included to allow meaningful evaluation and analysis.

Although several subtransmission route alternatives and system alternatives were considered, the Proposed Project described in this PEA was ultimately selected because it is technically feasible, and would result in the fewest potential environmental impacts while still meeting the Proposed Project objectives.

Design and construct the project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects.

SCE strives to construct projects in a consistent manner, meaning that the substation designs, transmission line designs, subtransmission line designs, distribution facility designs, and operating requirements for each type of facility are consistent and familiar to the field personnel that are required to operate and maintain the facilities. These standards are developed and revised as necessary based on experience to ensure SCE constructs safe, reliable, and operable facilities on a consistent basis. In addition, the consistent design ensures that upgrades to existing facilities are completed in a manner that provides the lowest total cost of ownership. SCE's standards provide a base to evaluate the merits of proposed changes, which are evaluated to determine impact on safety, reliability, operations, maintenance, construction, and cost.

Chapter 3
Project Description

This section provides a detailed description of Southern California Edison Company's (SCE) Valley South 115 kilovolt (kV) Subtransmission Project (Proposed Project).

3.1 Project Location

The Proposed Project is located in Southern California in southwestern Riverside County (see Figure 1.1 Proposed Project Location). The proposed 115 kV subtransmission line would be oriented primarily north to south in the Project Study Area located within the ENA (see Figure 1.2 Electrical Needs Area) within southwestern Riverside County. The proposed 115 kV subtransmission line would extend from SCE's existing Valley 500/115 kV Substation located on Menifee Road immediately south of State Route (SR-74) in the City of Menifee. The proposed 115 kV subtransmission line would traverse the northeastern portion of the city and extends south along Leon Road west of SR-79 to the south side of Benton Road. The proposed 115 kV subtransmission line would continue in a southerly direction paralleling Leon Road in southwestern Riverside County east of SR-79 into the City of Temecula terminating at the tubular steel pole (TSP), hereinafter referred to as the Terminal TSP, on the south side of Nicolas Road approximately 0.21 of a mile west of SCE's 115/12 kV Triton Substation. Additionally, SCE may utilize an existing material staging yard in the City of Perris.

Geographical Location: The Proposed Project is located within the cities of Menifee, Murrieta, Temecula, and portions of unincorporated communities of southwestern Riverside County (see Figure 1.2 Electrical Needs Area).

General Land Use : The existing land uses along the proposed 115 kV subtransmission line include electrical facilities, agriculture, vacant land, drainage basin, railroad, open space, public utilities, commercial, industrial park, and residential (see Section 4.10, Land Use and Planning, for additional land use information).

Property Description: The proposed facilities would be constructed primarily within existing SCE easements and fee-owned property, and public franchise areas. Based upon final engineering, some new easements and permits may be acquired to accommodate the facilities. The modifications proposed at SCE's existing Valley 500/115 kV Substation would be constructed within existing SCE fee-owned property (see Section 3.6 for further detail).

3.2 Existing System

The Valley South 115 kV System is currently comprised of six 115 kV subtransmission source lines from Valley Substation and thirteen 115/12 kV distribution substations. The Proposed Project's ENA is a portion of the Valley South 115 kV System and is primarily provided service through three 115 kV subtransmission source lines (Valley-Sun City, Valley-Auld, and Valley-

Auld-Triton). Within the ENA are eight 115/12 kV distribution substations (Sun City, Auld, Triton, Pauba, Pechanga, Moraga, Stadler, and Tenaja). Each of the distribution substations have distribution circuits, which originate from the substations to serve the surrounding customers. Figure 3.1-A Existing Valley South 115 kV System Configuration depicts the existing configuration. Figure 3.1-B Proposed Valley South 115 kV System Configuration depicts the proposed Valley South 115 kV System. Figure 3.2 Subtransmission Source Line Route Description depicts the portion of the Valley South 115 kV System relevant to the ENA that would exist after completion of the Proposed Project.

Figure 3.1-A Existing Valley South 115 kV System Configuration

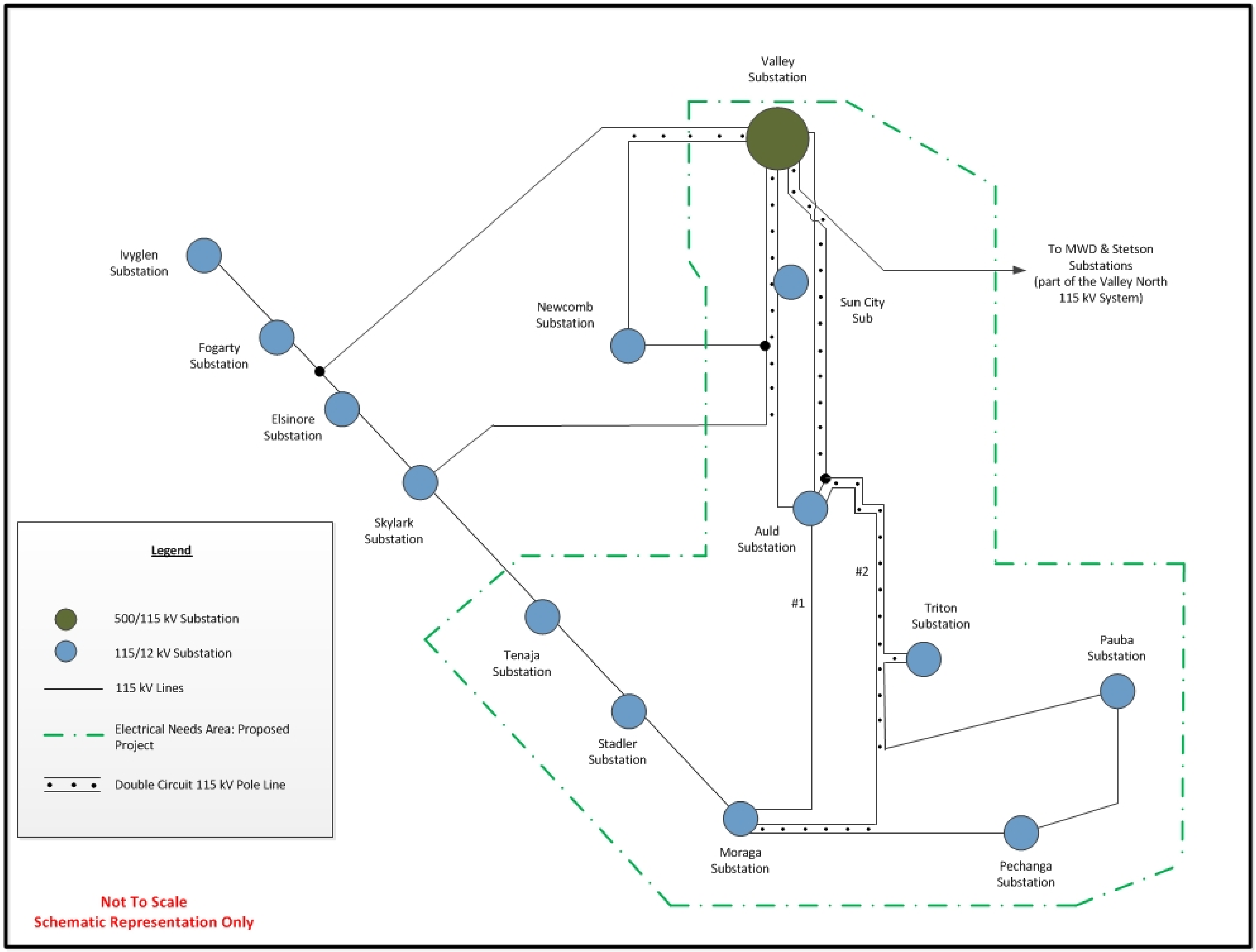
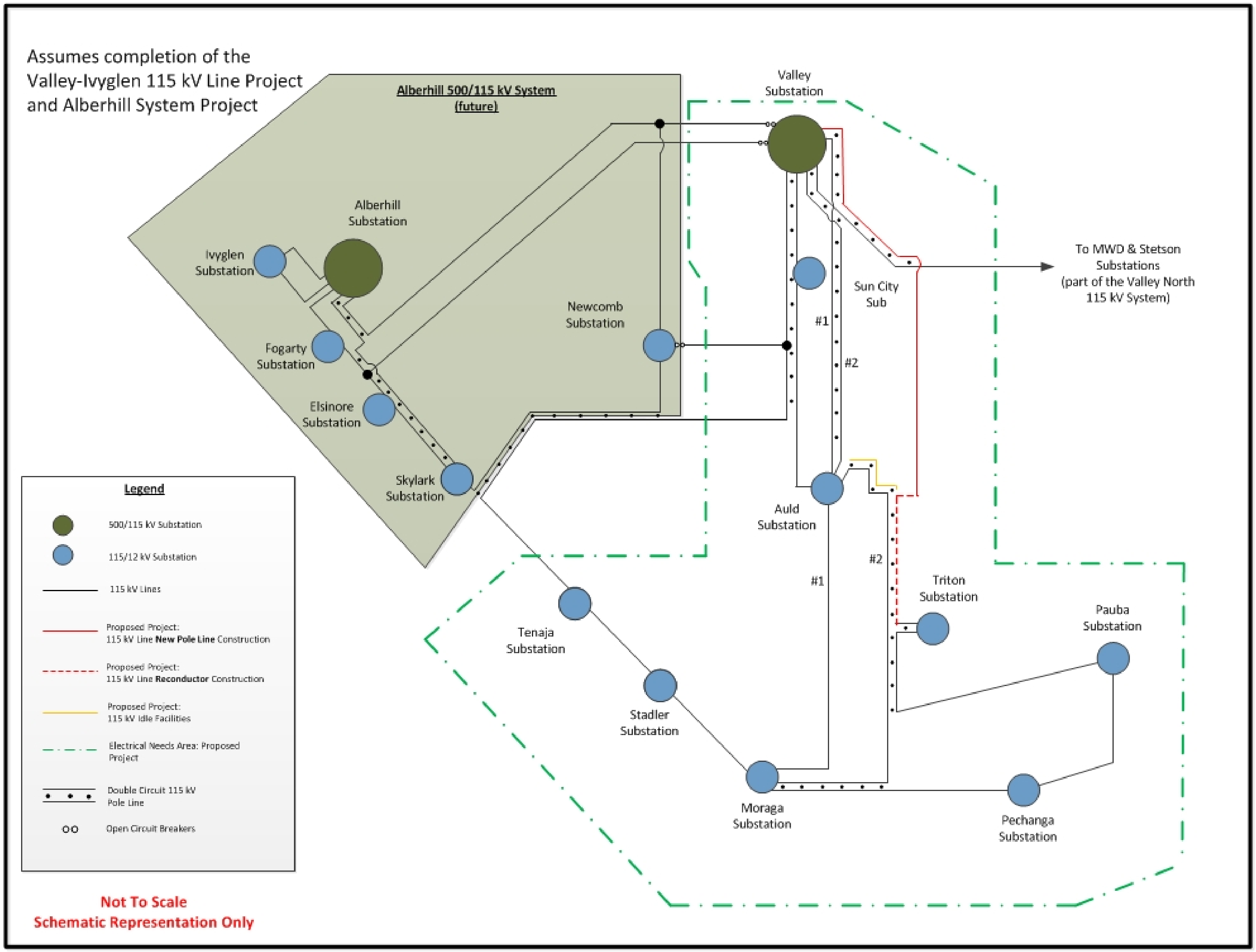


Figure 3.1-B Proposed Valley South 115 kV System Configuration



3.3 Project Objectives

As described above in Chapter 2, Project Purpose and Need and Objectives, the Proposed Project is being proposed to meet the following objectives:

- Provide safe and reliable electrical service
- Add capacity to serve long-term forecasted electrical demand requirements in the ENA as soon as possible after receipt of applicable permits
- Maintain or improve system reliability and provide greater operational flexibility within the ENA
- Meet Proposed Project needs while minimizing environmental impacts
- Design and construct the Proposed Project in conformance with SCE's approved engineering, design, and construction standards for substation, transmission, subtransmission, and distribution system projects

3.4 Proposed Project

The Valley South 115 kV Subtransmission Project includes the following elements:

- Modification of SCE's existing Valley 500/115 kV Substation would include equipping an existing 115 kV line position and providing protection equipment as required.
- Construction of a new 115 kV subtransmission line originating at SCE's existing Valley 500/115 kV Substation and connecting at a TSP, which is located at the southeast corner of Leon Road and Benton Road. The TSP is the common point of the three-terminal existing Valley-Auld-Triton 115 kV Subtransmission Line. The new construction and associated reconfiguration would result in the formation of the Valley-Auld No. 2 and Valley-Triton 115 kV Subtransmission Lines. The new 115 kV subtransmission line would be approximately 12 miles in length and is referred to as Segment 1 of the Proposed Project (see Figure 3.8 Segment 1 & Segment 2 Locations).
- Replacement of a segment of overhead conductor of the existing Valley-Auld-Triton 115 kV Subtransmission Line beginning at the TSP located at the southeast corner of Benton Road and Leon Road continuing south to the Terminal TSP located on the south side of Nicolas Road, approximately 250 feet west of Los Chorus Ranch Road in the City of Temecula. This reconductor segment is approximately 3.4 miles in length and is referred to as Segment 2 for the Proposed Project.
- Relocation of existing distribution and telecommunication lines would be required to support the installation of Segments 1 and 2 for the new 115 kV subtransmission line.
- Installation of telecommunication equipment at Triton and Valley Substations would support Segments 1 and 2 for the new 115 kV subtransmission line.

The Proposed Project description is based on planning-level assumptions. Exact details would be determined following completion of final engineering, identification of field conditions, availability of labor, material, and equipment, and compliance with applicable environmental and permitting requirements.

Additionally, as it relates to each of the project components, the Project Description utilizes conservative ground disturbance assumptions based on preliminary engineering to estimate surface area disturbance. This expanded surface area disturbance is provided for the purpose of ensuring the environmental analysis included in Chapters 4.0 through 6.0 sufficiently analyzes the potential environmental impacts of conservative ground disturbance assumptions. The actual surface area disturbance is expected to be reduced following completion of final engineering.

3.4.1 Project Capacity

The Valley South 115 kV Subtransmission System is a network of 115 kV power lines that provide electrical service to the distribution substations including those located within the ENA. The amount of electrical power that can be delivered to the ENA is primarily limited to the maximum amount of electrical demand that the Valley-Sun City, Valley-Auld, and Valley-Auld-Triton 115 kV Subtransmission Lines can provide before any individual subtransmission line operating capacity limit is exceeded. Each of the 115 kV subtransmission lines providing service to the ENA has operating limits of 218 mega volt-amperes (MVA) under normal system conditions and 294 MVA under abnormal system conditions.

SCE's annual system studies are performed to ensure that there is adequate capacity to provide service during peak electrical demand periods both under normal system conditions and under specific abnormal system conditions. Power flow studies of a network of lines evaluate the specific power flows that occur on the lines within the network and the power flow values that result are dictated by the electrical demand values of the distribution substations served by the lines and the characteristics of the power lines themselves (e.g., impedance of the lines). When studies determine there is insufficient capacity to provide service and prevent overloads from occurring, a project is identified to address the projected overload and stay within specified operating limits.

Currently, under a normal system configuration, the ENA of this Proposed Project is primarily served by three 115 kV source lines originating from Valley Substation (Valley-Sun City, Valley-Auld, and Valley-Auld-Triton) and share the electrical demand required to serve the distribution substations. Though the three lines do not all terminate at the same locations, each of the three ultimately deliver power to the distribution substations in the ENA and not all of the power flowing into a particular substation is delivered only to that substation. For example, the Valley-Sun City 115 kV Subtransmission Line (under a normal system configuration) carries more power than is required just for Sun City Substation. Sun City Substation is just the first point-of-delivery and the balance of the power continues on past Sun City Substation and goes on into the network to provide service to other downstream substations, such as Auld and Moraga Substations. This is true of the other 115 kV subtransmission lines in the network as well.

Under specific abnormal (N-1) system conditions (e.g., loss of one of the three primary source 115 kV subtransmission lines: Valley-Sun City, Valley-Auld, or Valley-Auld-Triton), the ENA of this Proposed Project would be served by only two of the three identified primary 115 kV subtransmission source lines originating from Valley Substation. Those two remaining in-service lines would share the electrical demand required to serve the distribution substations just like under a normal system configuration with the only difference being that the same amount of electrical demand would then be shared between only two lines rather than three. Under abnormal system conditions, the remaining in-service lines are allowed to be operated at a higher rating for a specific period of time. This higher rating (each of three lines has an emergency rating of 294 MVA) is the value against which the power flow study results are measured when evaluating the system performance and adequacy under abnormal (N-1) conditions.

SCE has identified that under specific abnormal system conditions (loss of one of the three primary 115 kV source lines) the emergency condition operating capacity limits of the two remaining in-service 115 kV subtransmission lines would be exceeded. By constructing the Proposed Project, the electrical demand would be shared between four lines under normal conditions and between three lines under abnormal conditions. Thus, within SCE's 10-year planning horizon (2014-2023) under both normal and abnormal system conditions, none of the four primary 115 kV subtransmission source lines that would serve the ENA of the Proposed Project are projected to be overloaded because the electrical demand would be shared between more lines. SCE has not identified any future work or phases in addition to the scope of work described above as the components of the Proposed Project.

3.5 Project Components

The components of the Proposed Project are described in more detail in the following subsections.

3.5.1 Transmission

This section is not applicable to the Proposed Project.

3.5.1.1 Transmission Voltage kV Transmission Line Description

This section is not applicable to the Proposed Project.

3.5.1.2 115 kV Subtransmission Line Description

The Proposed Project would include the following 115 kV subtransmission line elements:

Segment 1 of the new 115 kV subtransmission line route would originate at SCE's existing Valley 500/115 kV Substation and would connect at a replacement TSP on the southeast corner of Benton Road and Leon Road, as shown in Figure 3.2 Subtransmission Source Line Route Description.

The new 115 kV subtransmission line would exit Valley Substation southeasterly on a private road (SCE access road/farm road) between Menifee Road and Briggs Road underground for approximately 1,600 feet in a new duct bank that would consist of three new subtransmission vaults, and new underground 115 kV cables.

The new 115 kV subtransmission line would rise to an overhead position via a riser TSP that would be located on a private road. To accommodate this overhead transition of the new 115 kV subtransmission line at this location, approximately five existing light weight steel (LWS) poles would need to be removed and replaced with one new riser TSP and two LWS poles.

The existing pole heads would be reconfigured on the existing SCE subtransmission facilities to accommodate the new 115 kV overhead conductors (double circuiting the existing poles) for approximately 1 mile (along private road) from the new riser TSP to the T-intersection of Briggs Road and McLaughlin Road. Additional construction would include removal of and installation of one wood guy stub pole and modification of two existing TSPs. The new 115 kV subtransmission line would then extend south on Briggs Road to the intersection of Briggs Road and Matthews Road; this would require existing pole heads to be reconfigured to accommodate the new 115 kV conductors (double circuiting of existing poles) on existing SCE subtransmission facilities and the installation of two TSPs.

At the intersection of Briggs Road and Matthews Road, the new 115 kV subtransmission line would continue easterly for approximately 1 mile to the intersection of Leon Road and Grand Avenue, requiring the installation of the new 115 kV conductors on the SCE subtransmission facilities. Additional construction would include the removal of approximately 27 wood poles and 2 wood guy stub poles to be replaced with approximately 26 wood poles, 1 wood guy stub pole, and three TSPs.

The new 115 kV subtransmission line would continue single circuit south from the intersection of Leon Road and Grand Avenue for approximately 9 miles to the intersection of Benton Road and Leon Road requiring the installation of new 115 kV conductors, approximately 23 TSPs, approximately 8 LWS poles, approximately 215 wood poles and approximately 19 wood guy stub poles.

The new 115 kV subtransmission line would be approximately 12 miles in length from Valley Substation in the City of Menifee to the intersection of Leon Road and Benton Road in Riverside County, east of the City of Murrieta. The new 115 kV subtransmission line would form Segment 1 of the Proposed Project.

Segment 2 of the Proposed Project would begin at the intersection of Benton Road and Leon Road and continue southerly on Leon Road to the existing Terminal TSP on Nicolas Road. Construction would include removal of approximately 3.4 miles of 653 thousand circular mil (kcmil) aluminum conductor steel-reinforced (ACSR) and reconductor installation with non-specular 954 kcmil stranded aluminum conductor (SAC).

Structure removal and replacement construction would consist of approximately one TSP located at the southeast corner of Benton Road and Leon Road, one wood guy stub pole located on the west side of Leon Road at the Allen Road intersection and two wood poles located approximately 250 feet and 400 feet north of Nicolas Road. The transfer of three existing 954 kcmil SAC conductors would be required at structure replacement locations.

New construction would include one wood guy stub pole located on the north side of Benton Road approximately 90 feet west of Leon Road. Additionally, one existing LWS pole (located on the south side of Benton Road approximately 90 feet west of Leon Road) would include pole head reconfiguration from existing back-to-back post insulator construction to double dead-end arm construction (see Figure 3.2 Subtransmission Source Line Route Description). Based on preliminary engineering, an approximate combined total of 81 existing wood, LWS and TSP structures would not require structure replacement. Segment 2 of the Proposed Project is an existing double-circuit 115 kV subtransmission line approximately 3.4 miles in length.

The 115 kV subtransmission structures would support polymer dead end/suspension insulators measuring approximately 48 inches and/or polymer post insulators measuring approximately 60 to 62 inches. Additionally, non-specular 954 kcmil SAC would be installed as the new 115 kV subtransmission conductor. Existing fault return conductor (FRC) would be transferred to the new subtransmission LWS structures or a minimum 4/0 ACSR FRC would be installed as required.

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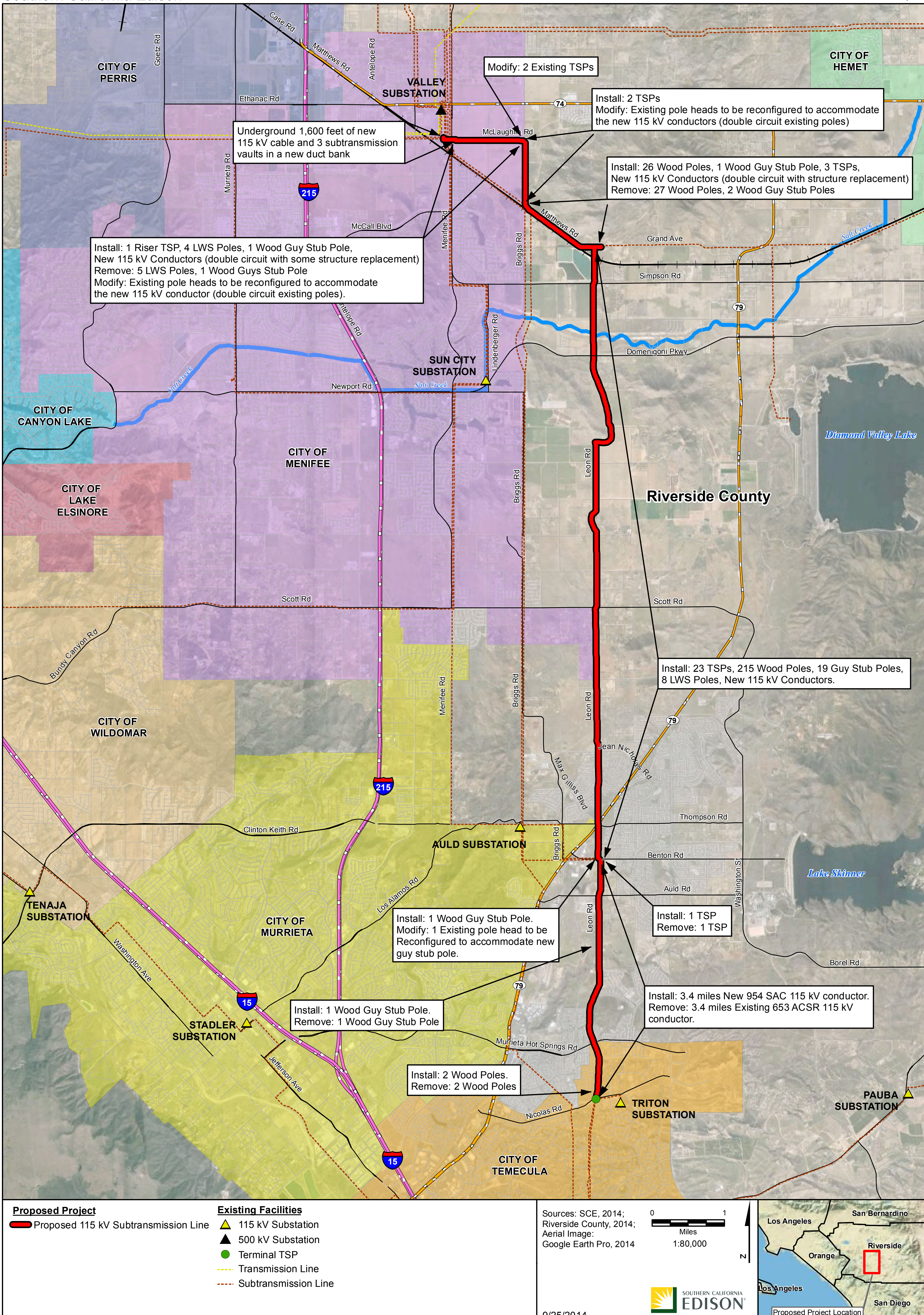
VALLEY SOUTH 115 KV SUBTRANSMISSION PROJECT FIGURE 3.2

Southern California Edison — Subtransmission Source Line Route Description



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3.5.1.3 Telecommunications Description

Telecommunications infrastructure would be added to connect the Proposed Project to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, and telephone services for the Proposed Project and associated facilities.

Installation of new telecommunication infrastructure would provide protective relaying services for the new 115 kV subtransmission line. Channel equipment will be installed in the existing Mechanical and Electrical Equipment Rooms (MEER) at the existing Valley and Triton Substations. This equipment interfaces between the relay and the optical transmission equipment, also housed in the MEER. All new communication equipment installations at the existing substations would occur within the existing MEER; therefore, no additional ground disturbance is associated with this proposed work inside the existing substations.

3.5.1.4 Distribution Description

This section is not applicable to the Proposed Project.

3.5.2 Poles/Towers

3.5.2.1 Transmission Poles/Towers

This section is not applicable to the Proposed Project.

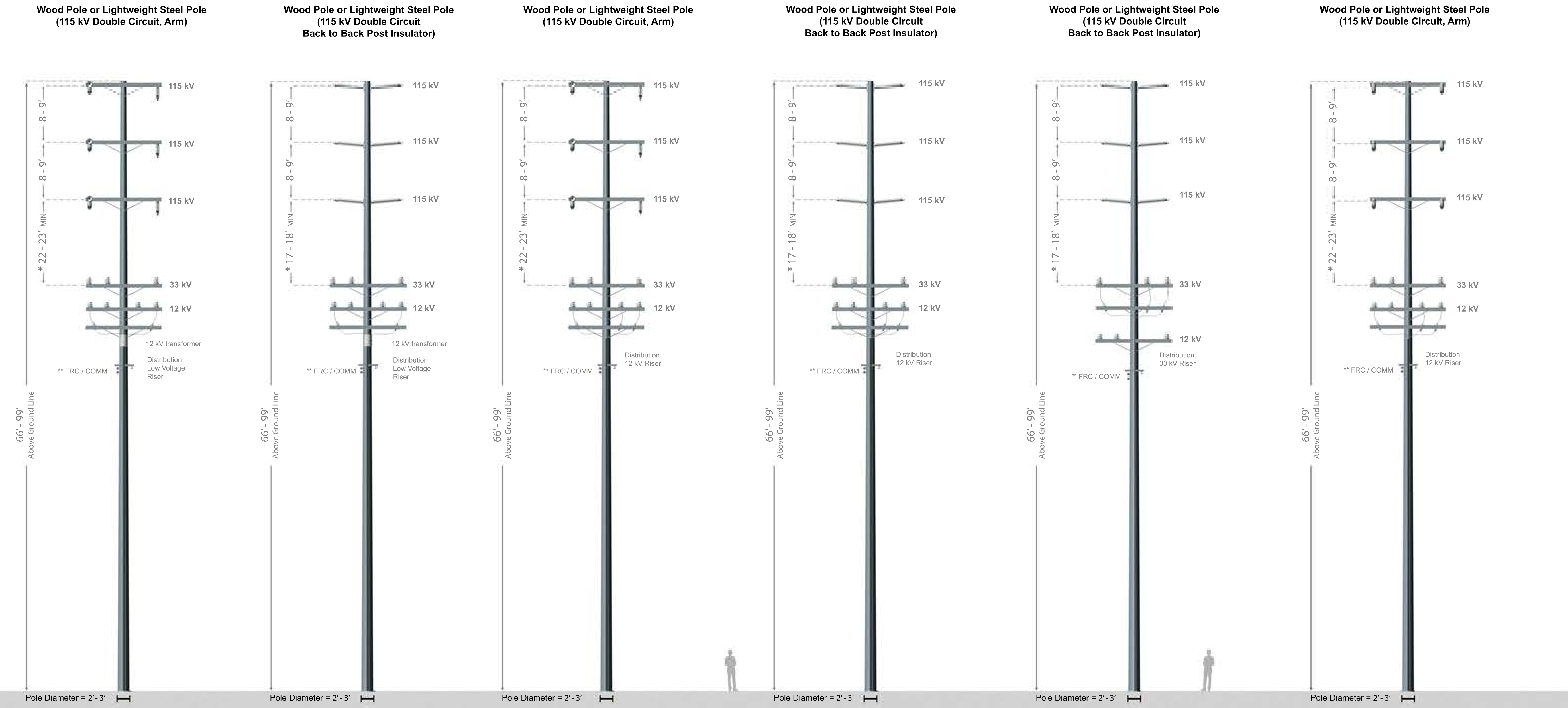
3.5.2.2 115 kV Subtransmission Poles/Towers

The subtransmission segments of the Proposed Project would utilize wood poles, LWS poles, TSPs and wood guy stub poles. The approximate dimensions of the proposed structure types are shown in Figure 3.3 Typical Subtransmission Structures and summarized in Table 3.1 Typical Subtransmission Structures to be Installed.

The 115 kV subtransmission structures would be designed consistent with the Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (Avian Power Line Interaction Committee, 2006).

Table 3.1 Typical Subtransmission Structures to be Installed

Pole Type	Proposed Number of Structures	Approximate Height Above Ground (Feet)	Approximate Pole Base Diameter (Feet)	Approximate Auger Hole Depth (Feet)	Approximate Auger Diameter (Feet)
Wood Poles	243	65 to 85	2 to 3	9 to 12	2 to 4
LWS Poles	12	74 to 99	2 to 3	10 to 13	3 to 4
TSP	30	75 to 115	2 to 5	N/A	N/A
TSP Concrete Foundations	30	0 to 4	N/A	20 to 40	5 to 9
Wood Guy Stub Poles	23	38 to 48	1 to 2	6 to 8	1 to 3



* MIN - Minimum

** FRC on LWS only

FRC - Fault Return Conductor

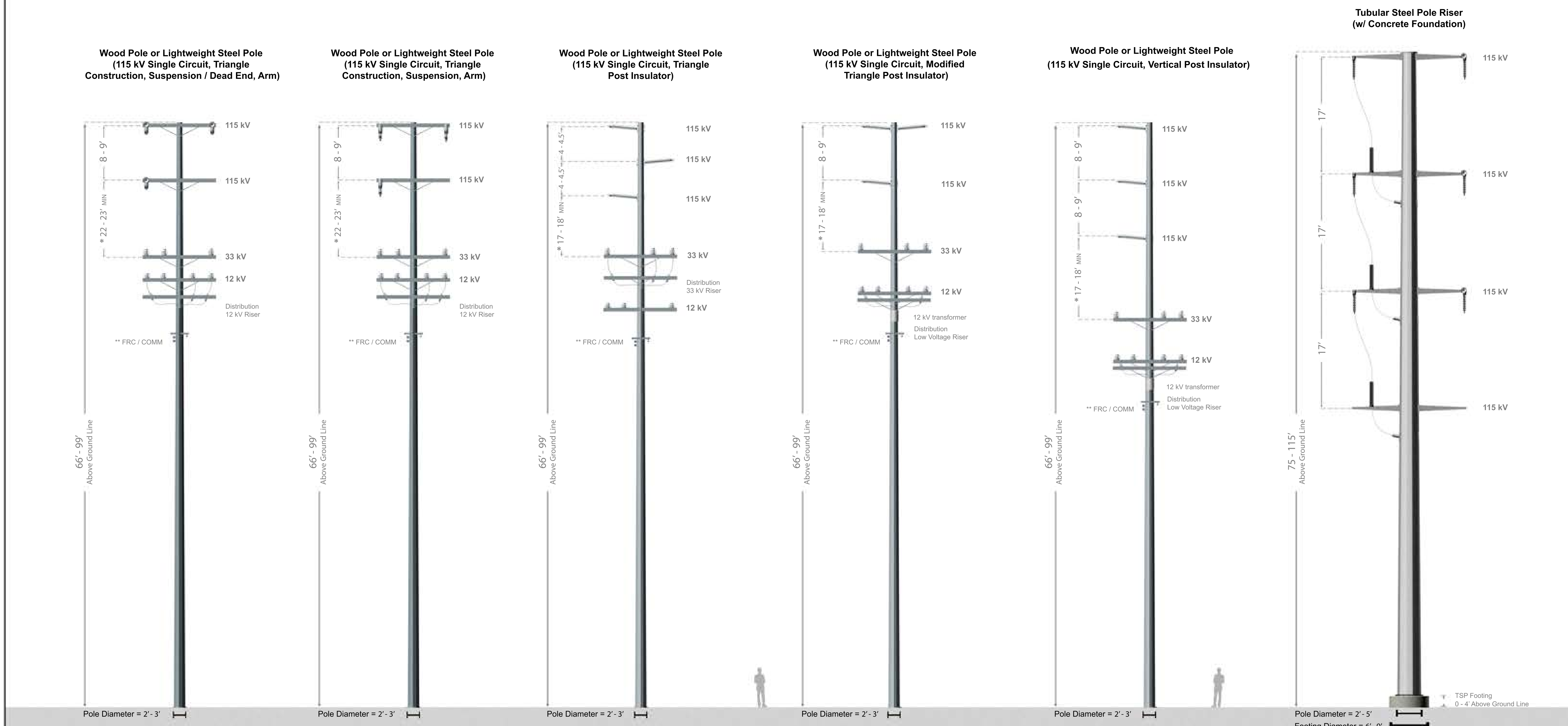
COMM - Communications

Refer to Table 3.1-C for pole top diameters

This diagram is based on engineering which is subject to change as a result of the CPUC permit process, final engineering, and any necessary adjustments during construction

Note:
While the "back to back post insulator" configuration is exactly the same and may appear redundant for several examples, the differences found on each of these poles relates to the lower conductors (i.e., underbuild) on the poles and the various types of equipment or conductors (e.g., transformers, switches, distribution) either existing or planned for the Proposed Project.

For wood poles, LWS poles, and wood guy stub poles the pole top diameters will range from 10 to 16 inches



* MIN - Minimum

** FRC on LWS only

FRC - Fault Return Conductor

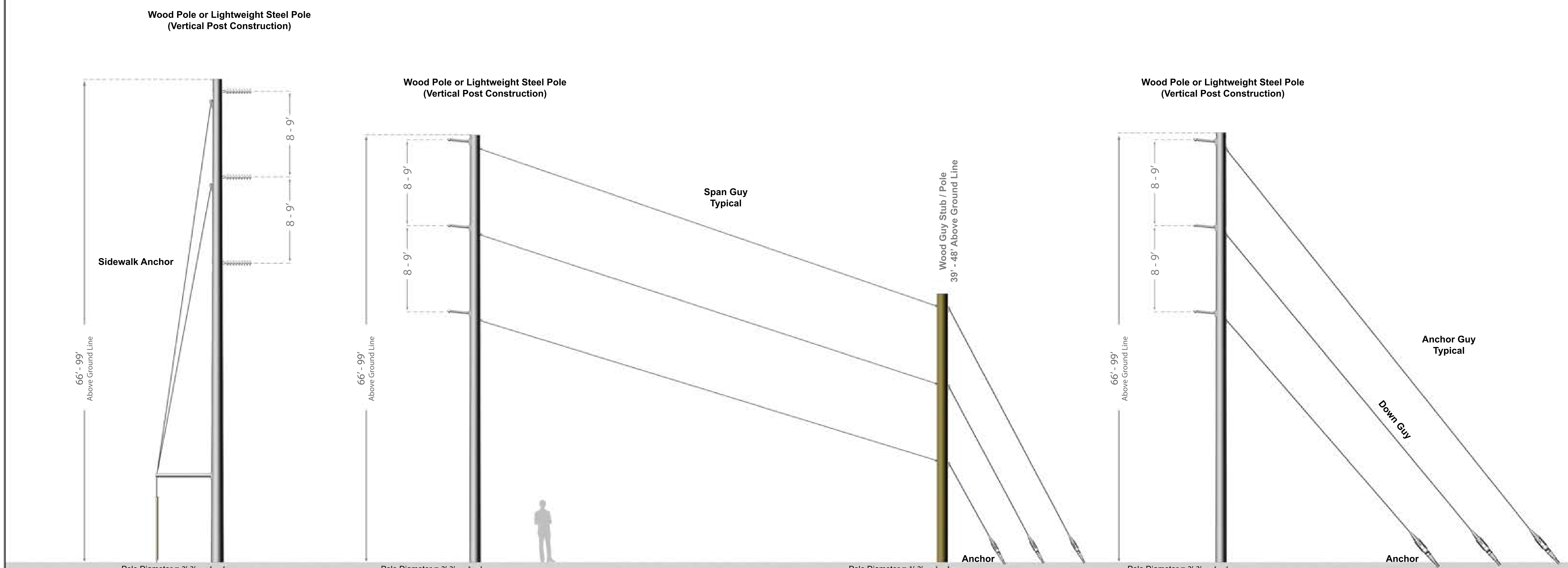
COMM - Communications

Refer to Table 3.1-C for pole top diameters

This diagram is based on engineering which is subject to change as a result of the CPUC permit process, final engineering, and any necessary adjustments during construction

Note:
While the "back to back post insulator" configuration is exactly the same and may appear redundant for several examples, the differences found on each of these poles relates to the lower conductors (i.e., underbuild) on the poles and the various types of equipment or conductors (e.g., transformers, switches, distribution) either existing or planned for the Proposed Project.

For wood poles, LWS poles, and wood guy stub poles the pole top diameters will range from 10 to 16 inches



Drawings on this page not to scale

* MIN - Minimum

** FRC on LWS only

FRC - Fault Return Conductor

COMM - Communications

Refer to Table 3.1-C for pole top diameters

This diagram is based on engineering which is subject to change as a result of the CPUC permit process, final engineering, and any necessary adjustments during construction

Note:
While the "back to back post insulator" configuration is exactly the same and may appear redundant for several examples, the differences found on each of these poles relates to the lower conductors (i.e., underbuild) on the poles and the various types of equipment or conductors (e.g., transformers, switches, distribution) either existing or planned for the Proposed Project.

For wood poles, LWS poles, and wood guy stub poles the pole top diameters will range from 10 to 16 inches

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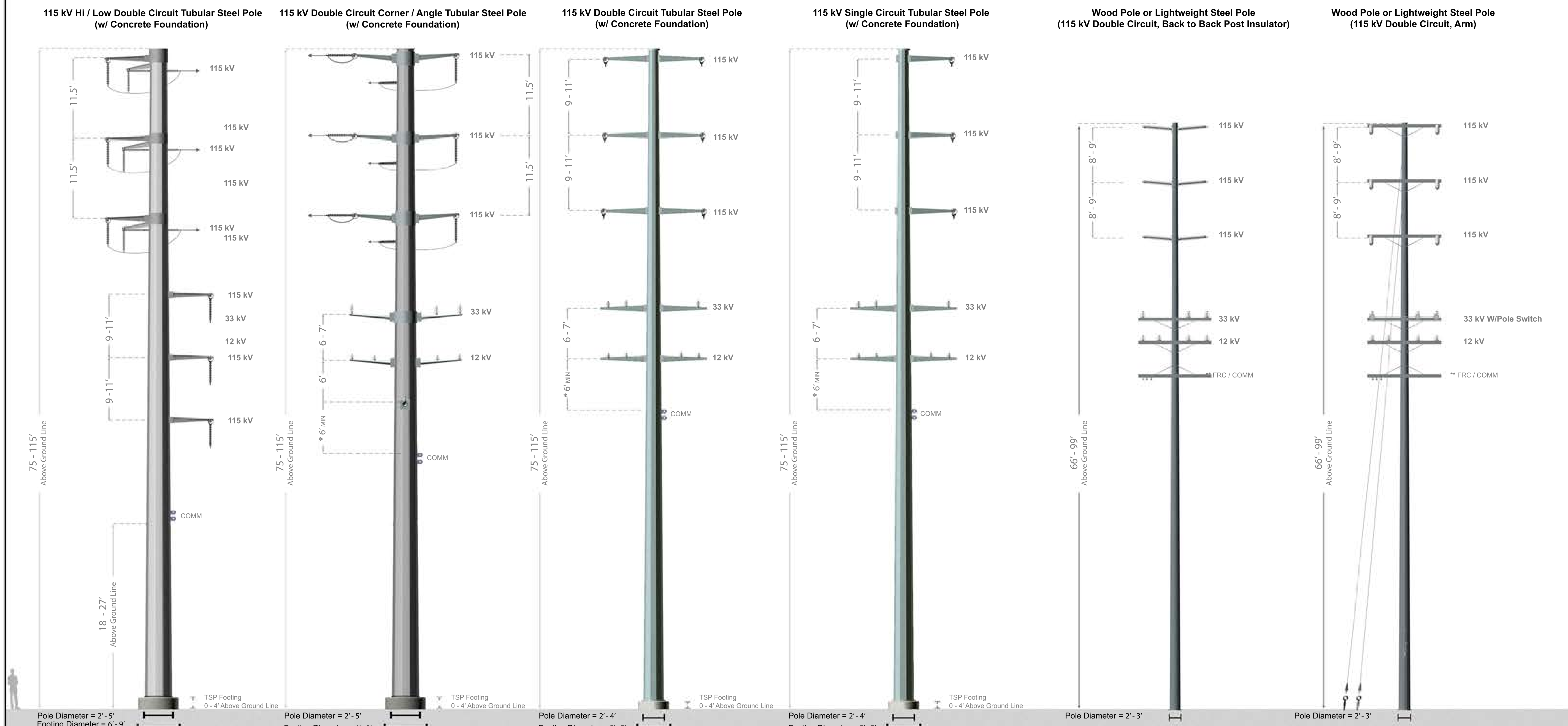

* MIN - Minimum

** FRC on LWS only

FRC - Fault Return Conductor

COMM - Communications

Refer to Table 3.1-C for pole top diameters

This diagram is based on engineering which is subject to change as a result of the CPUC permit process, final engineering, and any necessary adjustments during construction

Note:
While the "back to back post insulator" configuration is exactly the same and may appear redundant for several examples, the differences found on each of these poles relates to the lower conductors (i.e., underbuild) on the poles and the various types of equipment or conductors (e.g., transformers, switches, distribution) either existing or planned for the Proposed Project.

For wood poles, LWS poles, and wood guy stub poles the pole top diameters will range from 10 to 16 inches

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Approximately 243 wood poles would be used for the Proposed Project. Wood poles would be direct buried to a depth of approximately 9 to 12 feet below the ground surface and extend approximately 65 to 85 feet above the ground. The diameter of the wood poles would be approximately 2 to 3 feet at ground level and would taper to the top of the pole.

Approximately 12 LWS would be used for the Proposed Project. Lightweight steel poles would be direct buried to a depth of approximately 10 to 13 feet and extend approximately 74 to 99 feet above ground. The diameter of LWS poles would typically be 2 to 3 feet at ground level and tapers to the top of the pole.

A FRC would be transferred and/or upgraded, and installed on the new LWS subtransmission structures as required. Where a new FRC is required, a minimum 4/0 ACSR FRC would be installed between the LWS pole spans and attached to each LWS pole as shown in Figure 3.3 Typical Subtransmission Structures.

Approximately 23 new wood guy stub poles would be used for the Proposed Project. Wood guy stub poles would be direct buried to a depth of approximately 6 to 8 feet below ground and extend approximately 38 to 48 feet above ground. The diameter of wood guy stub poles would typically be 1 to 2 feet at ground level and would taper to the top of the pole. Where mechanical loads to be imposed on the poles are greater than can be safely supported by the poles, additional strength shall be provided by the use of guy wires and anchors. Span guy wire would be attached between the line pole and guy stub pole. The down guy wires would be attached to the wood guy stub pole and a 10-foot anchor rod(s), which has been installed in the ground.

Approximately 30 TSPs would be used for the Proposed Project. The TSPs would be approximately 2 to 5 feet in diameter at the base and extend approximately 75 feet to 115 feet above ground. The TSPs would be attached to concrete foundations that would be approximately 5 to 9 feet in diameter and would extend underground approximately 20 to 40 feet with up to approximately 0 to 4 feet of concrete visible above ground. Each TSP would use approximately 15 to 95 cubic yards of concrete. The TSPs would be steel structures with a dulled galvanized finish.

Approximately three 10-feet wide by 20-feet in length by 9.5-feet deep precast, concrete, tub-style splice vaults and one approximately 100-foot TSP riser pole would be installed to accommodate the underground portion of the 115 kV subtransmission line. The underground portion of the 115 kV subtransmission line would require a full encasement duct bank for approximately 1,300 feet in length outside the substation fence and 300 feet within the substation fence. Three 115 kV cable terminations would be installed individually on the end of the 3,000-kcmil copper underground cable. The cable terminations would then be connected to the new overhead non-specular 954 SAC conductor at the TSP riser pole location.

In order to accommodate the proposed 115 kV subtransmission facilities, some of the existing 12 kV and 33 kV distribution facilities would need to be modified. This includes the transfer of a portion of existing distribution facilities to newly installed structures and as necessary, the lowering of distribution facilities on existing structures located along SCE's existing subtransmission facilities. Additionally, this would require the removal of approximately 230 wood poles.

SCE would file Federal Aviation Administration (FAA) notifications for Proposed Project structures, as required. With respect to Proposed Project structures, the FAA will conduct its own analysis and may recommend no changes to the design of the proposed structures; or may request redesigning the proposed structures near the airports to reduce the height of such structures; or marking the structures, including the addition of aviation lighting; or placement of marker balls on wire spans. SCE would evaluate the FAA recommendations for reasonableness and feasibility, and in accordance with Title 14 Part 77, SCE may petition the FAA for a discretionary review of its determination to address any issues with the FAA determination. FAA agency determinations for permanent structures typically are valid for 18 months, and therefore such notifications would be filed upon completion of final engineering and before construction commenced. The entirety of the Proposed Project area would be built within a combination of existing and newly acquired easements and franchise rights (the "Right-of-Way"), and all construction activities would be performed at a distance from airport activity sufficient to minimize safety concerns to construction personnel.

Approximately 74 poles/towers are anticipated to require FAA notifications. SCE would consult with the FAA and implement recommendations, as required. Typical recommendations include, but are not limited to, the following: installation of marker balls on spans (catenaries) between structures, and/or installation of lighting on structures. Generally, marking or lighting is recommended by the FAA for those spans or structures that exceed 200 feet in height above ground level; however marking or lighting may be recommended for spans and structures that are less than 200 feet above ground level, but located within close proximity to an airport or other high-density aviation environment. The specific requirements for the installation of marker balls or lights are specified in FAA Advisory Circular AC 70/7460-1K; when marker balls are installed, SCE complies with FAA installation requirements, as follows:

Marker Ball Specifications

- **Size and Color:** The diameter of the markers used on extensive catenary wires across canyons, lakes, rivers, etc., should be not less than 36 inches (91 cm). Smaller 20-inch (51 cm) spheres are permitted on less extensive power lines or on power lines below 50 feet (15 m) above the ground and within 1,500 feet (458 m) of an airport runway end. Each marker should be a solid color such as aviation orange, white, or yellow.
- **Spacing:** Markers should be spaced equally along the wire at intervals of approximately 200 feet (61 m) or a fraction thereof. Intervals between markers should be less in critical areas near runway ends (i.e., 30 to 50 feet [10 m to 15 m]). They should be displayed on the highest wire or by another means at the same height as the highest wire. Where there is more than one wire at the highest point, the markers may be installed alternately along each wire if the distance between adjacent markers meets the spacing standard. This method allows the weight and wind loading factors to be distributed.
- **Pattern:** An alternating color scheme provides the most conspicuity against all backgrounds. Mark overhead wires by alternating solid colored markers of aviation orange, white, and yellow. Normally, an orange sphere is placed at each end of a line and the spacing is adjusted (not to exceed 200 feet [61 m]) to accommodate the rest of the markers.

When lighting is installed, SCE complies with FAA installation requirements, as follows:

Lighting Specifications

- **Structures 150 feet or less** – Structures 150 feet or less have two steady burning red lights on the top of the structure. The lights are illuminated only during darkness.
- **Structures over 150 feet** – Taller structures that exceed 150 feet have a flashing red beacon on the top of the structure, and two steady burning red lights at mid-height. They are illuminated only during darkness.

3.5.2.3 Telecommunications Poles/Towers

This section is not applicable to the Proposed Project.

3.5.3 Conductor/Cable

3.5.3.1 Above-Ground Installation

This section is not applicable to the Proposed Project.

3.5.3.1.1 Transmission

This section is not applicable to the Proposed Project.

3.5.3.1.2 Subtransmission

Existing 115 kV subtransmission structures would be double circuited with new non-specular 954-kcmil SAC. New 115 kV subtransmission structures would be single circuit or double circuit with new non-specular 954-kcmil SAC. A FRC would be transferred and/or upgraded, and installed on the new subtransmission structures as required.

The subtransmission conductor is planned to be at least 49 feet above ground as measured at the pole. The vertical distance between the conductors installed on the poles would be a minimum of 8 feet. The horizontal distance between the conductors installed on poles would be a minimum of 11 feet and would maintain a minimum 60 inches between the 115 kV conductor and ground wire.

Preliminary conductor span lengths for wood and LWS pole spans are a minimum of approximately 80 feet to a maximum of 350 feet and approximately a minimum 80 feet to a maximum 600 feet for TSP spans; the actual span lengths are to be determined during final engineering.

All conductors installed as part of the Proposed Project would be ACSR or SAC. The 4/0 ACSR would be 0.563 inches in diameter and the 954 SAC would be 1.124 inches in diameter. The existing 653 ACSR 115 kV conductors transferring to the new 115 kV structures are 0.953 inches in diameter.

The approximate dimensions of the proposed structure types are shown in Figure 3.3 Typical Subtransmission Structures and summarized in Table 3.1 Typical Subtransmission Structures to be Installed.

3.5.3.1.3 Telecommunications

Existing SCE and third-party telecom cables would be transferred to the new subtransmission poles installed for Segments 1 and 2 of the Proposed Project. These cables would be attached with wood cross-arms and /or metallic suspension side clamps. New telecom cable would not be installed for Segments 1 and 2 of the Proposed Project.

3.5.3.1.4 Distribution

Based upon preliminary engineering, existing distribution facilities would need to be transferred and removed with the installation of the new Valley-Triton 115 kV Subtransmission Line. The distribution facilities along a private road would need to be adjusted in elevation to allow for the double circuiting of the existing Valley-Auld-Triton 115 kV Subtransmission Line. Distribution facilities along Leon Road would need to be transferred from the existing pole locations to the new 115 kV subtransmission line pole locations. This would require the installation of new conductor and/or the transferring of existing conductor. Additionally, all equipment (capacitors, switches, transformers, automatic reclosers, services, secondaries, etc.) would need to be transferred to the new pole locations.

In order to accommodate the proposed 115 kV subtransmission facilities, some of the existing 12 kV and 33 kV distribution facilities would need to be modified. This includes the transfer of a portion of existing distribution facilities to newly installed structures and, as necessary, the lowering of distribution facilities on existing structures located along SCE’s existing subtransmission facilities. Additionally, this would require the removal of approximately 230 wood poles.

3.5.3.2 Below-Ground Installation

3.5.3.2.1 Transmission

This section is not applicable to the Proposed Project.

3.5.3.2.2 Subtransmission

The Proposed Project includes a total of approximately 1,600 feet of new trench for the underground portion of the new 115 kV subtransmission line and associated transition and support structures. Support structures include duct bank and vaults.

Segment 1 would include a new underground conventional system consisting of three new subtransmission vaults, a new duct bank, and new underground 115 kV (single circuit, cross-linked polyethylene, stranded-dielectric, copper) cables. The dimensions of the underground vaults would be approximately 10 feet wide by 20 feet long with an approximate height of 9.5 feet. The duct bank would be approximately 21 inches in height by 17.5 inches in width (see Figure 3.4 Typical Subtransmission Duct Bank for standard duct bank configuration and Figure 3.5 Typical Subtransmission Vault for standard vault configuration).

As trenching for the underground 115 kV subtransmission line is completed, SCE would begin to install the underground duct bank. Collectively, the duct bank is comprised of cable conduit, spacers, ground wire, and concrete encasement. The duct bank typically consists of six 5-inch diameter encased burial polyvinyl chloride (PVC) conduits fully encased with a minimum of 3 inches of concrete on all sides. Typical 115 kV subtransmission duct bank installations would accommodate six cables. The Proposed Project would utilize three cable conduits and leave three spare cable conduits pursuant to SCE’s current standards for 115 kV underground construction.

The majority of the 115 kV duct banks would be installed in a vertically stacked configuration. In areas where underground utilities are highly congested or areas where it is necessary to fan out the conduits to reach termination structures, a flat configuration duct bank may be required.

In instances where a subtransmission duct bank would cross or run parallel to other substructures that operate at normal soil temperature (e.g., gas lines, telephone lines, water mains, storm drains, sewer lines), a minimal radial clearance of 6 inches for crossing and 12 inches for paralleling these substructures would be required, respectively. Where duct banks cross or run parallel to substructures that operate at temperatures significantly exceeding normal soil temperature (e.g., other underground transmission circuits, primary distribution cables, steam lines, heated oil lines), additional radial clearance may be required. Clearances and depths would meet requirements set forth within Rule 41.4 of CPUC G.O. 128. There is no underground work proposed for Segment 2 of the Proposed Project.

Figure 3.4 Typical Subtransmission Duct Bank

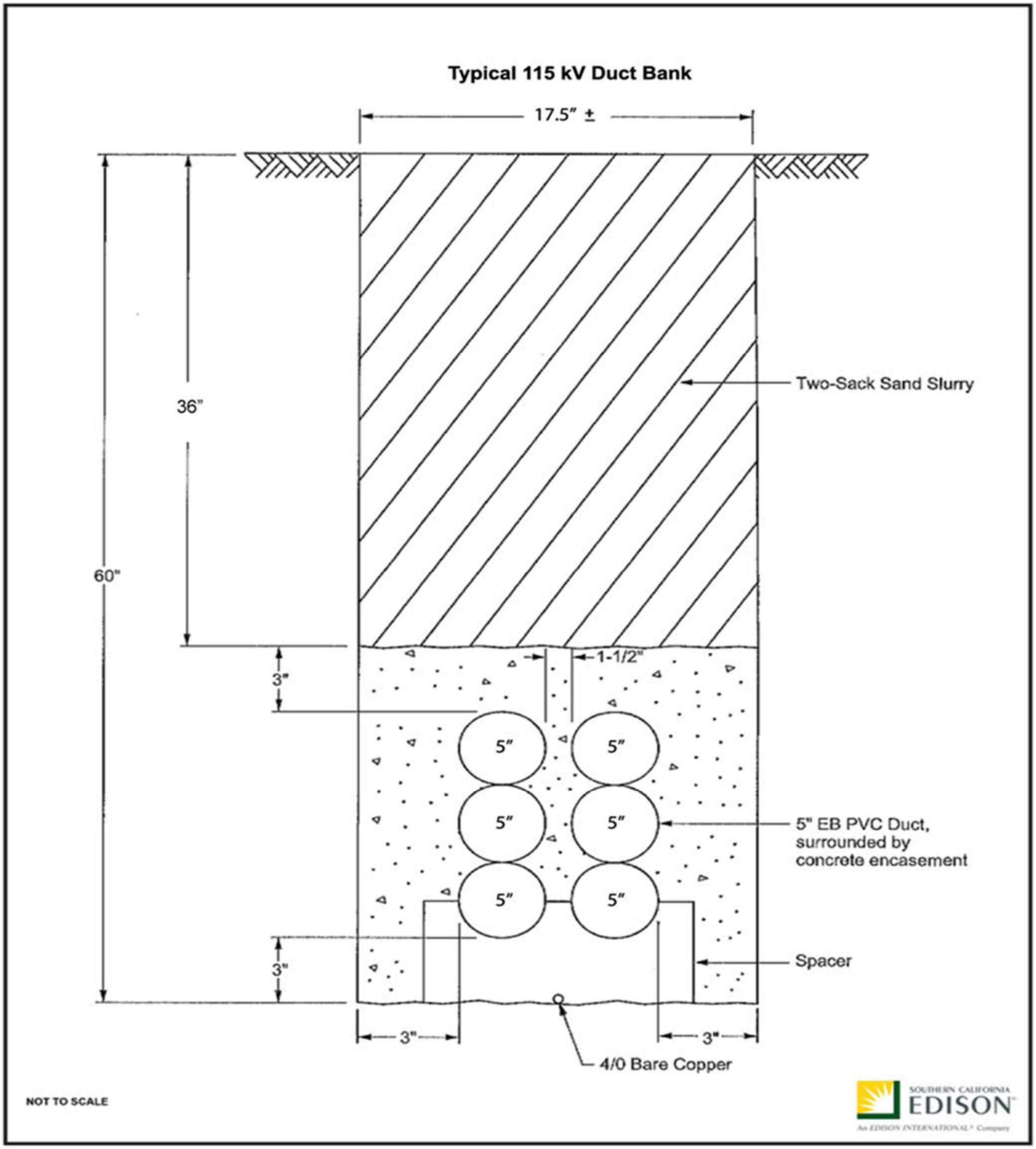
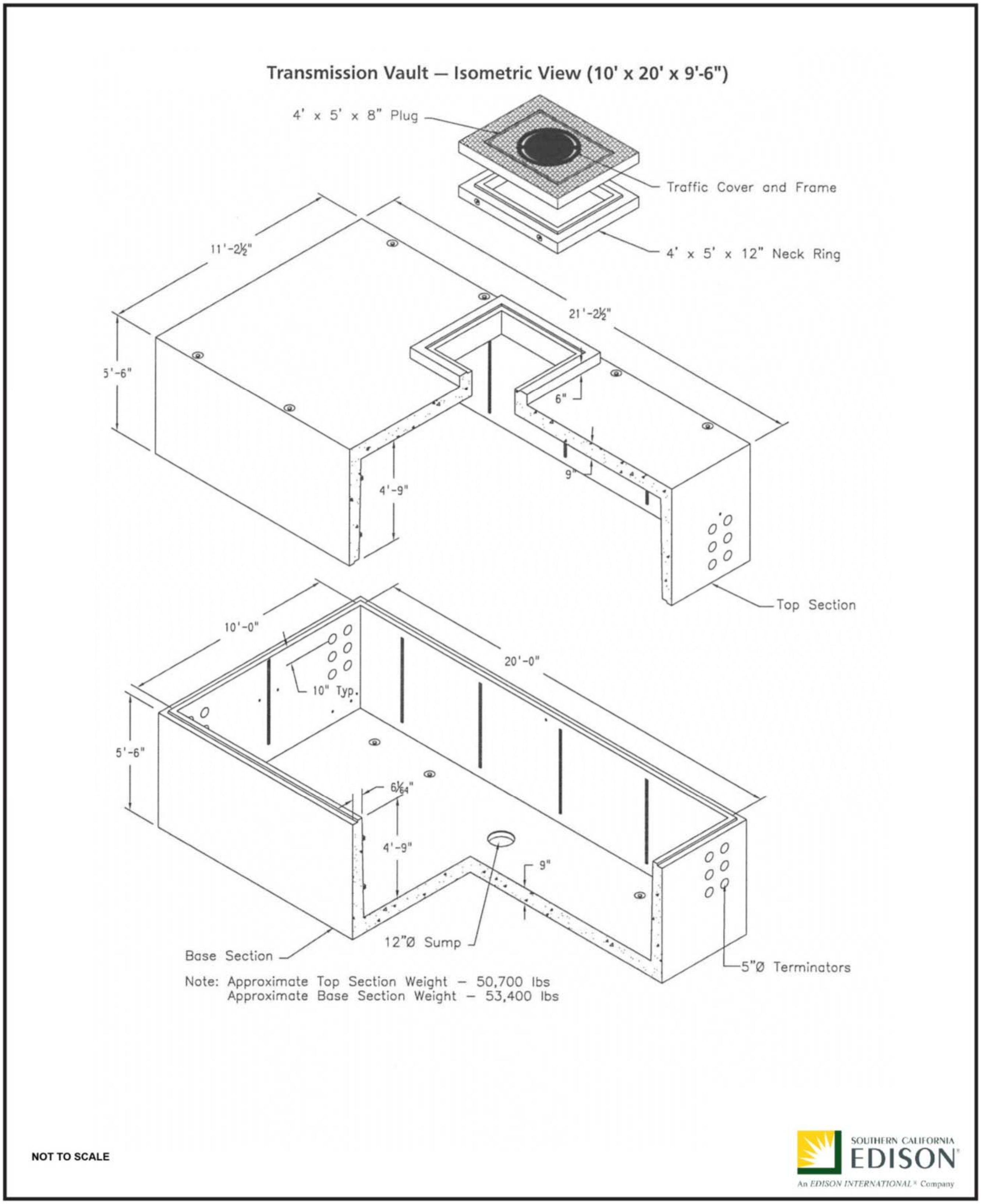


Figure 3.5 Typical Subtransmission Vault



3.5.3.2.3 Telecommunications

This section is not applicable to the Proposed Project.

3.5.3.2.4 Distribution

Based upon preliminary engineering, there are approximately 14 locations where overhead to underground transitions (risers) would need to be adjusted within Segment 1. These adjustments would require trenching and the installation of conduits from the point of interception to the new pole locations.

Segment 1 includes a total of approximately 900 feet of new underground distribution lines and associated transition and support structures. An approximately 20 to 24-inch wide by 46-inch deep trench would be required to place the distribution line underground. This depth is required to meet the minimum 30 inches of cover above the duct bank. Excavated materials would be disposed of at an off-site disposal facility in accordance with all applicable laws. Should groundwater be encountered, it would be pumped into a tank and disposed of at an off-site disposal facility in accordance with all applicable laws.

The trench for underground construction would be widened and shored where appropriate to meet California Occupation and Safety Health Administration requirements. Trenching would be staged so that open trench lengths would not exceed that which is required to install the duct banks. Where needed, open trench sections would have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access would be arranged with local jurisdictions in advance of construction activities.

3.5.4 Substations

This section is not applicable to the Proposed Project.

3.5.4.1 [Highest voltage] kV Switchrack

This section is not applicable to the Proposed Project.

3.5.4.2 [High voltage] – [Low voltage] kV Transformers

This section is not applicable to the Proposed Project.

3.5.4.3 [First Stepdown voltage] kV Switchrack

This section is not applicable to the Proposed Project.

3.5.4.4 [Low voltage] – [66-12 kV voltage] kV Transformers

This section is not applicable to the Proposed Project.

3.5.4.5 [Second Stepdown kV voltage] kV Switchrack

This section is not applicable to the Proposed Project.

3.5.4.6 [Third Stepdown kV voltage] kV Switchrack

This section is not applicable to the Proposed Project.

3.5.4.7 Capacitor Banks

This section is not applicable to the Proposed Project.

3.5.4.8 Other Electric Equipment

This section is not applicable to the Proposed Project.

3.5.4.9 Control Building

This section is not applicable to the Proposed Project.

3.5.4.10 Substation Electrical Power

This section is not applicable to the Proposed Project.

3.5.4.11 Mechanical and Electrical Equipment Room

This section is not applicable to the Proposed Project.

3.5.4.12 Microwave [Tower or Monopole]

This section is not applicable to the Proposed Project.

3.5.4.13 Counterpoise

This section is not applicable to the Proposed Project.

3.5.4.14 Ancillary Facilities Description

This section is not applicable to the Proposed Project.

3.5.4.15 Restroom Facilities

This section is not applicable to the Proposed Project.

3.5.4.16 Fire Water Retention Basin and/or Collection System

This section is not applicable to the Proposed Project.

3.5.4.17 Substation Access

This section is not applicable to the Proposed Project.

3.5.4.18 Substation Parking Area

This section is not applicable to the Proposed Project.

3.5.4.19 Substation Grading and Drainage Description

This section is not applicable to the Proposed Project.

3.5.4.20 Substation Lighting

This section is not applicable to the Proposed Project.

3.5.4.21 Substation Perimeter

This section is not applicable to the Proposed Project.

3.5.4.22 Distribution Getaways

This section is not applicable to the Proposed Project.

3.5.4.23 Modifications to Existing Substations

In order to accommodate the Proposed Project connection at SCE's existing Valley 500/115 kV Substation, the following work would be conducted:

- Equip a position of the existing 115 kV switchrack with two 115 kV circuit breakers, (the circuit breakers would contain an estimated 60 to 90 pounds of SF_6), four 115 kV group-operated disconnecting switches, one 115 kV potential transformer, three 115 kV lightning arresters, and install a conductor bus using two 1,590-kcmil ACSR conductors. In addition, a 115 kV line getaway exiting the substation would be installed underground.
- Install equipment conduit and grounding for the circuit breakers and disconnect switches, which would include trenching.
- Install six protection relays mounted in two 19-inch relay racks inside the MEER.

3.6 Right-of-Way Requirements

Upon final engineering and receipt of the Proposed Project approvals, SCE would confirm the necessary land and acquire the same for the Proposed Project. The proposed land rights that may need to be acquired and/or amended are as follows:

- **Access** – Access to all project components would be provided directly from existing public roads or existing SCE access roads, except for one proposed pole location along Leon Road where some access road design is proposed and would require a new easement. For more details on this access road, see Section 3.7.1.3.
- **Subtransmission** – The proposed 115 kV subtransmission line would tie into SCE's existing Valley 500/115 kV Substation. The route location is currently within existing easements and public right-of-way (ROW) where SCE holds franchise; however, approximately 36 private properties would require new or upgraded land rights and agency permits as required.
- **Distribution** – Any existing distribution lines along the proposed route would be co-located on the same structures and should not require additional land rights.
- **Telecommunications** – Any existing telecom lines along the proposed route would be co-located on the same structures and should not require additional land rights.
- **Construction Support** – Based on final engineering and construction requirements, Temporary Entry Permits and/or leases may be acquired from private land owners to provide sufficient equipment and material storage, staging and work areas for any approved project component.

To support the Proposed Project, SCE will utilize approximately 0.13 miles of SCE fee-owned property, 9.2 miles of existing easements of variable widths, up to 55 feet wide; 1.3 miles of franchise rights; 5.2 miles of proposed new or upgraded easements sufficient to contain the proposed facilities and provide safety and access, which is estimated to be 25 to 30 feet wide. Easement widths are based on facility types, final design and type of right to be acquired; therefore, we have provided approximate distances. Upgrading easements may include adding land rights, adding width to existing easements, improving or clarifying access or maintenance rights, etc.

3.7 Construction

The following subsections describe the construction activities associated with the Proposed Project.

3.7.1 For All Projects

3.7.1.1 Staging Areas

Construction of the Proposed Project would require the establishment of temporary staging yards. Staging yards would be used as a reporting location for workers, vehicle and equipment parking, and material storage. The yard may also have construction trailers for supervisory and clerical personnel. Staging yards may be lit for safety and security. Normal maintenance and refueling of construction equipment would also be conducted at these yards. All refueling and storage of fuels would be in accordance with the Storm Water Pollution Prevention Plan (SWPPP).

SCE anticipates using one or more of the possible locations listed in Table 3.2 Potential Staging Yard Locations as the staging yard(s) for the Proposed Project. Typically, each yard would be approximately 2 to 5 acres in size, depending on land availability and intended use. Preparation of the staging yard would include temporary perimeter fencing and, depending on existing ground conditions at the site, grubbing and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock. Slope stabilization issues have not been identified at this time. However, any potential issues would be addressed in the SWPPP at the time of final engineering. Any land that may be disturbed at the staging yard would be returned to pre-construction conditions or left in its modified condition, if requested by the landowner following the completion of construction for the Proposed Project.

Temporary power would be determined based on the type of equipment/facilities being used at the staging yards. If existing distribution facilities are available, a temporary service and meter may be used for electrical power at one or more of the yards. If it is determined that temporary power is not needed or available at the staging yards full time, a portable generator may be used intermittently for electrical power at one or more of the yards.

Materials commonly stored at the substation construction staging area would include, but not be limited to, portable sanitation facilities, electrical equipment such as circuit breakers, disconnect switches, lightning arresters, transformers, vacuum switches, steel beams, rebar, foundation cages, conduit, insulators, conductor and cable reels, pull boxes, and line hardware.

Materials commonly stored at the subtransmission and/or distribution construction staging yards would include, but not be limited to, construction trailers, construction equipment, portable sanitation facilities, steel bundles, steel/wood poles, conductor reels, overhead ground wire (OHGW) or overhead optical ground wire (OPGW) reels, hardware, insulators, cross arms, signage, consumables (such as fuel and filler compound), waste materials for salvaging, recycling, or disposal, and Best Management Practice (BMP) materials (straw wattles, gravel, and silt fences).

Approximately 25 gallons of fuel would be stored at the site for use in the generator or power tools. The SWPPP(s) prepared for the Proposed Project would identify locations for storage of hazardous materials during construction as well as BMPs, notifications, and clean-up requirements for incidental spills or other potential releases of hazardous materials.

A majority of materials associated with the construction efforts would be delivered by truck to designated staging yards, while some materials may be delivered directly to the temporary transmission and subtransmission construction areas described in Section 3.7.1.2, Work Areas.

Table 3.2 Potential Staging Yard Locations

Yard Name	Location	Condition	Approx. Area (Acres)	Project Component
Subtransmission Material Yard 1	Located in the City of Menifee, southwest corner of Private Road and Menifee Road	Previously Disturbed	2.0	Subtransmission
Subtransmission Material Yard 2	Located in Riverside County, approximately 700 feet west of Van Gaale Lane south side of Benton Road	Previously Disturbed	2.0	Subtransmission
Subtransmission Material Yard 3	Located in the City of Perris, approximately 150 feet north of Case Road, 250 feet east of G Street on Walker Avenue	Previously Disturbed	2.4	Subtransmission
Subtransmission Material Yard 4	Located in the City of Menifee, approximately 350 feet south of Ethanac Road on west side of Antelope Road	Previously Disturbed	4.6	Subtransmission
Distribution Material Yard 5 (Menifee Service Center)	Located in the City of Menifee, on the east side of Menifee Road just south of SR-74.	Previously Disturbed	N/A[1]	Distribution
Substation Material Yard 6 (Valley Substation)	Located in the City of Menifee, on the west side of Menifee Road just south of SR-74.	Previously Disturbed	N/A[1]	Substation

Note:

[1] Material yard is located at an existing SCE facility, which is currently being used to store materials not associated with the Proposed Project. This material yard was included for the purposes of the environmental analysis.

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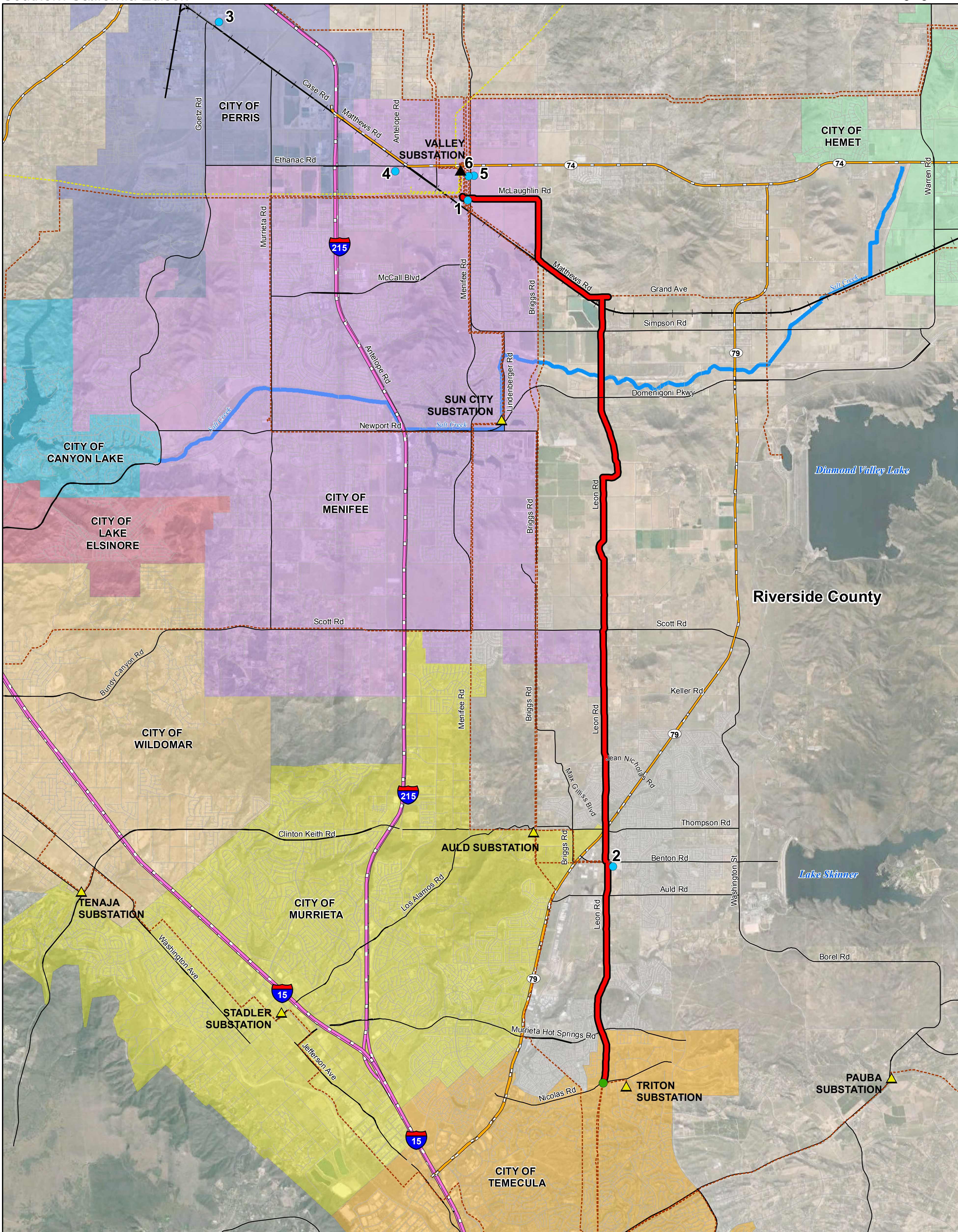
VALLEY SOUTH 115 KV SUBTRANSMISSION PROJECT

FIGURE 3.6

Southern California Edison

Staging Yards



Proposed Project

- Proposed 115 kV Subtransmission Line
- Staging Yards

Existing Facilities

- 115 kV Substation
- 500 kV Substation
- Terminal TSP
- Transmission Line
- Subtransmission Line

Sources: SCE, 2014; Riverside County, 2014; Aerial Image: Google Earth Pro, 2014

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3.7.1.2 Work Areas

Construction work areas serve as temporary working areas for crews and where project related equipment and/or materials are placed at or near each structure location, within SCE ROW or franchise. Table 3.3 Approximate Laydown/Work Area Dimensions, identifies the approximate land disturbance for these construction areas dimensions for the Proposed Project.

The new structure pad locations and laydown/work areas (Table 3.3 Approximate Laydown/Work Area Dimensions) would first be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface for structure installation. Sites would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area would be compacted to at least 90-percent relative density, and would be capable of supporting heavy vehicular traffic.

Erection of the structures may also require establishment of a temporary crane pad. The crane pad would occupy an area of approximately 50 feet by 50 feet and be located adjacent to each applicable structure within the laydown/work area used for structure assembly. The pad may be cleared of vegetation and/or graded as necessary to provide a level surface for crane operation. The decision to use a separate crane pad would be determined during final engineering for the Proposed Project and the selection of the appropriate construction methods to be used by SCE or its Contractor.

Benching may be required to provide access for footing construction, assembly, erection, and wire stringing activities during line construction. Benching is a technique in which an earth moving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain. Benching would also be used on an as-needed basis in areas to help ensure the safety of personnel during construction activities.

Table 3.3 Approximate Laydown/Work Area Dimensions

Laydown/Work Area Feature	Preferred Size (L x W)
Guard Structures	150’ x 75’
TSPs	200’ x 150’
LWS/Wood Poles	150’ x 75’
LWS/Wood Guy Poles	150’ x 75’
LWS Poles (Removal)	150’ x 150’
Wood Poles/Down Guys (Removal)	150’ x 75’
Reconfigure Pole Top	50’ x 50’
Splicing Set Up Area	150’ x 100’
Pull and Tension Area	300’ x 100’

Laydown/Work Area Feature	Preferred Size (L x W)
Underground Vaults	100’ x 100’
Note: The dimensions listed above are preferred for construction efficiency; actual dimensions may vary depending on project constraints	

3.7.1.3 Access Roads and/or Spur Roads

Subtransmission line roads are classified into two groups; access roads and spur roads. Access roads are through roads that run between structure sites along a ROW and serve as the main transportation route along line ROWs. Spur roads are roads that lead from access roads and terminate at one or more structure sites.

For construction of the Proposed Project, SCE would utilize a combination of through roads and spur roads accessed from a network of existing paved and unpaved public and private roads. For Segment 1 of the Proposed Project, SCE would also use and maintain one existing permanent unpaved access road 400 feet in length on the easterly side of Leon Road starting approximately 300 feet south of Craig Road. Access that would be used for construction purposes would be utilized for operation and maintenance (O&M) as well. For Segment 2 of the Proposed Project, there are no new access roads anticipated. SCE will utilize existing access roads for the reconductor portion of the Proposed Project.

Some rehabilitation may be required for the existing unpaved access roads. Typical construction activities associated with that rehabilitation include vegetation clearing, blade-grading and re-compacting to remove potholes, ruts, and other surface irregularities in order to provide a smooth dense riding surface capable of supporting heavy construction and maintenance equipment. Existing unpaved roads may also require additional upgrades such as protection for underground utilities and widening existing road widths that are too narrow for safe vehicle operation.

Generally, unpaved access roads would have a minimum 14 feet drivable width with 2 feet of shoulder on each side as determined by the existing land terrain to accommodate required drainage features. Typically the drivable road width would be widened, generally ranging from an additional 0 to 8 feet along curved sections of the access road creating up to 22 feet drivable surface for the access road. Access road gradients would be leveled so that sustained grades generally do not exceed 12 percent. Curves would typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where 50 feet minimum radii cannot be achieved.

Access Locations

Access for construction and O&M activities outside of SCE ROW may be required in certain areas until such time that the proposed and/or dedicated public streets are improved to ultimate build out as identified in the Riverside County General Plan Circulation Element (August 2008). SCE will work with the corresponding property owner(s) to identify the best route across the unimproved proposed and/or dedicated public streets. These access locations would traverse the proposed and/or dedicated public street ROW along Menifee Road, Briggs Road, Matthews Road, Case Road, Grand Avenue, Leon Road, Old Leon Road (for reference purposes only) Simpson Road, Scott Road, Holland Road, Penny Cress Lane, Thompson Road, Max Gillis Boulevard, Newport Road/Domenigoni Parkway, SR-79, Benton Road, Antelope Road, Ethanac Road, and SR-74 to gain access to each pole site and/or staging yards. A private road between Menifee and Briggs Roads that is currently being used as a SCE access road/farm road will also be evaluated when identifying the best route.

Generally, SCE would utilize overland travel from the edge of the existing paved or dirt road approximately 50 feet to reach each pole site, accounting for approximately 7.7 acres of land disturbance. Where necessary, ground-disturbance dimensions and activities associated with these access locations would be similar to the dimensions and activities described for the rehabilitation of existing unpaved roads, such as mowing, grubbing, and grade blading. The number of access locations required would be dependent upon final engineering, existing topographical considerations, and availability of suitable terrain that would provide safe access. These access locations will not be maintained by SCE after the project construction is completed but instead utilized on an as needed basis only until the public street ROW is completely built out.

Table 3.4 Access Road Land Disturbance

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Access Road	1	400' x 18'	0.2	0	0.2
Note: In the "Disturbance Acreage Calculation column, the width may increase to approximately 26 feet along curved sections of the access roads.					

3.7.1.4 Helicopter Access

The Proposed Project will not utilize helicopters to support construction activities or O&M.

3.7.1.5 Vegetation Clearance

The new structure pad locations and laydown/work areas (Table 3.3 Approximate Laydown/Work Area Dimensions) would first be graded and/or cleared of vegetation as necessary to provide a reasonably level and vegetation-free surface for structure installation. Sites would be graded such that water would run toward the direction of the natural drainage. In addition, drainage would be designed to prevent ponding and erosive water flows that could cause damage to the structure footings. The graded area would be compacted to at least 90 percent relative density, and would be capable of supporting heavy vehicular traffic.

The subtransmission and distribution lines would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable.

Vegetation management for operations and maintenance is described in Section 3.8, Operation and Maintenance.

3.7.1.6 Erosion and Sediment Control and Pollution Prevention during Construction

3.7.1.6.1 Storm Water Pollution Prevention Plan

Construction of the Proposed Project would disturb a surface area greater than one acre. Therefore, SCE would be required to obtain coverage under the Statewide Construction General Permit (Order No. 2009-0009-DWQ) from the State Water Resources Control Board (SWRCB). Commonly used BMPs are storm water runoff quality control measures (boundary protection), dewatering procedures, and concrete waste management. The SWPPP would be based on final engineering design and would include all project components.

3.7.1.6.2 Dust Control

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the South Coast Air Quality Management District's Rule 403[4], which reduces the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions. This measure may include the use of water trucks and other dust control measures which may include dust suppressants that work by either agglomerating the fine particles, adhering/binding the surface particles together, or increasing the density of the road surface material. Additionally, see Section 3.9, Applicant Proposed Measures, for additional proposed measures.

3.7.1.6.3 Hazardous Materials

Construction of the Proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. All hazardous materials would be stored, handled, and used in accordance with applicable regulations. Material Safety Data Sheets would be made available at the construction site for all crew workers.

3.7.1.6.4 Reusable, Recyclable, and Waste Material Management

Construction of the Proposed Project would result in generation of various waste materials, including wood, metal, soil, vegetation, and sanitation waste (portable toilets). Sanitation waste (i.e., human-generated waste) would be disposed of in accordance with applicable sanitation waste management practices. Material from existing infrastructure that would be removed as part

[4] Rule 403 in its entirety can be found on SCAQMD's website at http://www.aqmd.gov/rules/reg/reg04/r403.pdf.

of the Proposed Project such as conductor, steel, concrete, and debris, would be temporarily stored in one or more staging yards as the material awaits salvage, recycling, and/or disposal.

The existing wood poles removed for the Proposed Project would be returned to a staging yard, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a RWQCB-certified municipal landfill.

Material excavated for the Proposed Project would either be used as fill, backfill for new wood poles, wood guy stub poles, LWS poles, TSP footings, or anchors installed for the project, made available for use by the landowner, and/or disposed of off-site at an appropriately licensed waste facility. If contaminated material is encountered during excavation, work would stop at that location and SCE's Spill Response Coordinator would be called to the site to make an assessment and notify the proper authorities.

3.7.1.7 Clean up and Post-Construction Restoration

SCE would clean up and restore all areas that would be temporarily disturbed by construction of the Proposed Project (which may include the material staging yard, construction setup areas, stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of construction of the Proposed Project. SCE will provide a post-construction restoration plan when construction is nearing completion. Until construction is nearing completion, the levels of clean up and restoration efforts that may be required are unknown.

If restoration or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. Additional information pertaining to the habitat restoration and/or revegetation plan(s) can be found in Section 4.4, Biological Resources.

3.7.2 Subtransmission Line Construction (Above-Ground)

The following sections describe the above-ground construction activities associated with installing the subtransmission line segments for the Proposed Project.

3.7.2.1 Pull and Tension Sites[5]

The pulling, tensioning, and splicing set-up locations associated with the Proposed Project would be temporary and the land would be restored to its previous condition following completion of pulling and splicing activities. The set-up locations require level areas to allow for maneuvering of the equipment and, when possible, these locations would be located on existing roads and level areas to minimize the need for grading and cleanup. Approximately 40 set-up locations are

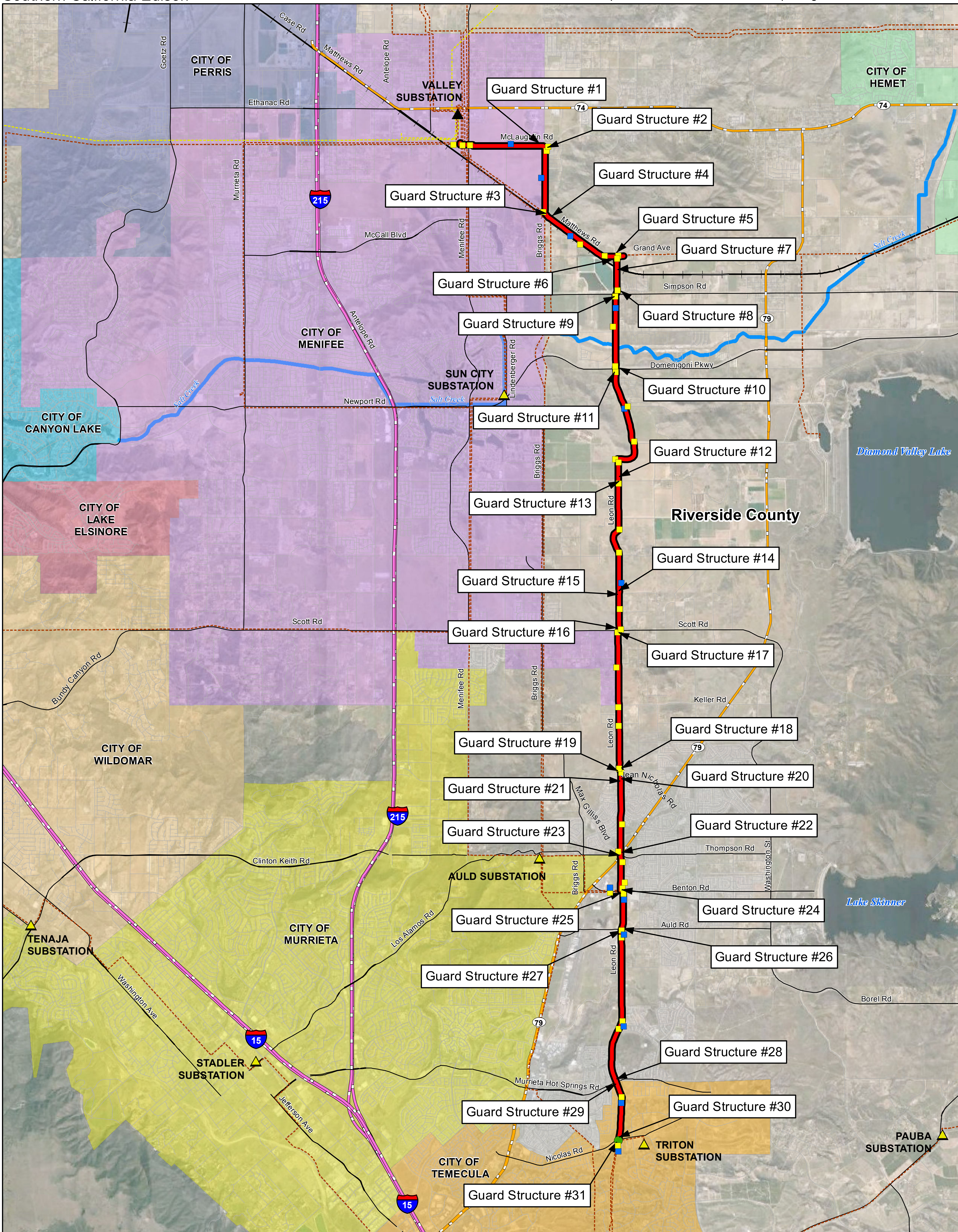
[5] For the purposes of this PEA, the term “pull and tension site” is synonymous with the term “stringing sites.”

currently proposed. The final number and location of these sites would be determined upon final engineering. The approximate area needed for stringing set-ups associated with wire installation is variable and depends upon terrain. See Table 3.5 Subtransmission Approximate Land Disturbance for approximate size of pulling, tensioning and splicing equipment set-up areas and laydown dimensions.

VALLEY SOUTH 115 KV SUBTRANSMISSION PROJECT FIGURE 3.7

Southern California Edison

Proposed Pull & Tension Sites, Splicing Sites & Guard Structures



Proposed Project
- Proposed 115 kV Subtransmission Line
- Pull & Tension Sites (Not to Scale)
- Splicing Sites (Not to Scale)

Existing Facilities
- 115 kV Substation
- 500 kV Substation
- Terminal TSP
- Transmission Line
- Subtransmission Line

*Note: All Guard Structure locations are approximate and subject to change

Sources: SCE, 2014; Riverside County, 2014; Aerial Image: Google Earth Pro, 2014

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Wire pulls are the length of any given continuous wire installation process between two selected points along the line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 6,000 feet on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is typically diminished. Generally, pulling locations and equipment set-ups would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Each stringing operation consists of a puller set-up positioned at one end, and a tensioner set-up with wire reel stand truck positioned at the other end of the wire pull. Pulling and wire tensioning locations may also be utilized for splicing and field snubbing of the conductors. Temporary splices, if required, may be necessary since permanent splices that join the conductor together cannot travel through the rollers. Splicing set-up locations are used to remove temporary pulling splices and install permanent splices once the conductor is strung through the rollers located on each structure. Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned in back of a dead-end structure.

3.7.2.1.1 Telecommunication Pull and Tension Sites

This section is not applicable to the Proposed Project.

3.7.2.2 Pole Installation and Removal

Pole installation and removal would require the use of a variety of equipment as presented in Tables 3.10-A, 3.10-B, and 3.10-C; all construction vehicles and equipment would be moved to pole installation or removal sites overland using the existing subtransmission access road network and spur roads.

3.7.2.2.1 Pole and Foundation Removal

The Proposed Project would involve removing structures, conductor, and associated hardware. The following work is proposed in the sequence below:

- **Road w ork –** Existing access roads would be used to reach structures, but some rehabilitation and grading may be necessary before removal activities would begin to establish temporary crane pads for structure removal, etc
- **Wire-pulling locations –** Wire pulling sites would be located approximately every 6,000 feet along the existing utility corridor, and would include locations at dead-end structures and turning points
- **Conductor removal –** Upon placement of the wire pulling equipment, the subtransmission conductor would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a construction yard where it would be prepared for recycling

- **Structure removal** – Most structure removal activities would use the previously disturbed areas established for structure installation. If previously disturbed areas adjacent to the structure are not available, an area would be cleared of vegetation and graded if the ground is not level. Structures would be dismantled down to the foundations and the materials would be transported to a construction yard where it would be prepared for recycling
- **Footing/Foundation removal** – Footings would be removed to a point 1 to 2 feet below grade and the holes would be filled with excess soil and smoothed to match the surrounding grade. Footing materials would be transported to a construction yard where it would be prepared for disposal

Any existing transmission lines, subtransmission lines, distribution lines, and telecommunication lines (where applicable) would be transferred to the new structures prior to removal of existing structures. Any remaining facilities that are not reused by SCE would be removed and delivered to a facility for disposal as described in Section 3.7.1.6.4, Reusable, Recyclable, and Waste Material Management.

The existing wood poles would be completely removed once the subtransmission, distribution, and telecommunication lines are transferred to the new poles. The removal would consist of the above- and below-ground portions of the pole. The holes left from removing the poles would be backfilled with spoils that may be available as a result of the excavation for new poles and using imported fill as needed.

The removal of LWS poles would consist of the above- and below-ground portions of the pole. The holes left from removing the poles would be backfilled with spoils that may be available as a result of the excavation from other construction areas and using imported fill as needed.

For each type of structure (TSP, LWS, or wood poles), a crane truck or rough-terrain crane would be used to support the structure during removal; an equipment pad of approximately 50 feet by 50 feet might be required to allow a removal crane to be set up at a distance of up to 70 feet from the structure center line. The crane rail would be located transversely from the structure locations. Structures would be dismantled down to the foundations and the materials would be transported to a construction yard where it would be stored for pick up and disposal at an approved recycling facility.

Removal of other structures, such as, cell towers and culverts have not been identified within the Proposed Project area at this time.

3.7.2.2.2 Top Removal

For the Proposed Project, topping existing wood poles would be required when third-party telecom/cable would remain on the topped poles. Access to the pole tops would be via bucket truck(s), or linemen would climb the poles where vehicle access was limited. Once the subtransmission and/or distribution conductors have been removed and transferred to the new poles, the support crossarms on the existing poles (if equipped) would be removed and the top portion of the poles above the existing telecom/cable attachment point would be cut and removed.

3.7.2.2.3 Pole/Tower Installation

3.7.2.2.3.1 Foundation Installation

Each TSP would require a drilled, poured-in-place, concrete footing that would form the structure foundation. The hole would be drilled using truck or track-mounted excavators. Excavated material would be used as described in Section 3.7.1.6.4, Reusable, Recyclable, and Waste Material Management. Following excavation of the foundation footings, steel-reinforced cages would be set, positioning would be survey verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility. TSP foundations typically require an excavated hole approximately 5 feet to 9 feet in diameter at approximately 20 feet to 40 feet deep. TSPs would require approximately 10 to 95 cubic yards of concrete delivered to each structure location.

The excavated material would be distributed at each structure site, used to backfill excavations from the removal of nearby structures (if any), and/or used in the rehabilitation of existing access roads. Alternatively, the excavated soil may be disposed of at an off-site disposal facility in accordance with applicable laws as described in Section 3.7.1.6.4, Reusable, Recyclable, and Waste Material Management.

Slight to severe ground caving is anticipated along the preferred route during the drilling of the TSP foundations due to the presence of loose soils or groundwater levels. The use of water, fluid stabilizers, drilling mud and/or casings would be made available to control ground caving and to stabilize the sidewalls from sloughing. If fluid stabilizers are utilized, mud slurry would be added in conjunction with the drilling. The concrete for the foundation is then pumped to the bottom of the hole, displacing the mud slurry. Mud slurry brought to the surface is typically collected in a pit adjacent to the foundation and/or vacuumed directly into a truck to be reused or discarded at an off-site disposal facility in accordance with all applicable laws.

Concrete samples would be drawn at the time of pour and tested to ensure engineered strengths were achieved. A normally specified SCE concrete mix typically takes approximately 20 working days to cure to an engineered strength. This strength is verified by controlled testing of sampled concrete. Once this strength has been achieved, crews would be permitted to commence erection of the structure.

During construction, existing concrete supply facilities would be used where feasible.

Prior to drilling for foundations, SCE, or its Contractor, would contact Underground Service Alert to identify any existing underground utilities in the construction zone.

3.7.2.2.3.2 Lattice Steel Tower Installation

This section is not applicable to the Proposed Project.

3.7.2.2.3.3 Tubular Steel Pole Installation

TSPs typically consist of multiple sections. The pole sections would be placed in temporary laydown areas at each pole location. See Table 3.3 Approximate Laydown/Work Area Dimensions for approximate laydown dimensions. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware. A crane would then be used to set each steel pole base section on top of the previously prepared foundations. If existing terrain around the TSP location is not suitable to support crane activities, a temporary crane pad would be constructed within the laydown area. When the base section is secured, the subsequent section of the TSP would be slipped together into place onto the base section. The pole sections may also be spot welded together for additional stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure prior to setting the poles.

3.7.2.2.3.4 Wood Pole Installation

Each wood pole would require a hole to be excavated using either an auger, backhoe, or with hand tools. Excavated material would be used as described in Section 3.7.1.6.4, Reusable, Recyclable, and Waste Material Management. The wood poles would be placed in temporary laydown areas at each pole location. While on the ground, the wood poles may be configured (if not reconfigured) with the necessary cross arms, insulators, and wire stringing hardware before being set in place. The wood poles would then be installed in the holes, typically by a line truck with an attached boom. Wood guy stub poles would be installed similarly to wood poles.

3.7.2.2.3.5 Light Weight Steel Pole Installation

Each LWS pole would require a hole to be excavated using either an auger or excavated with a backhoe. Excavated material would be used as described in Section 3.7.1.6.4, Reusable, Recyclable, and Waste Material Management. LWS poles consist of separate base and top sections and may be placed in temporary laydown areas at each pole location. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire-stringing hardware. The LWS poles would then be installed in the holes, typically by a line truck with an attached boom. When the base section is secured, the top section would be installed on top of it. Depending on the terrain and available equipment, the pole sections could also be assembled into a complete structure on the ground prior to setting the poles in place within the holes. LWS guy stub poles would be installed similarly to LWS poles.

3.7.2.2.3.6 Wood Pole Equivalent Pole Installation

This section is not applicable to the Proposed Project.

3.7.2.2.3.7 Microwave Installation

This section is not applicable to the Proposed Project.

3.7.2.2.3.8 Subtransmission Land Disturbance Table

Land disturbance for the new 115 kV subtransmission line portion of the Proposed Project would include surface modifications for the installation of access roads, 115 kV subtransmission line installation and conductor transfer, and relocation of existing distribution facilities. The estimated land disturbance for these project features are summarized in Table 3.5 Subtransmission Approximate Land Disturbance.

Table 3.5 Subtransmission Approximate Land Disturbance

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Subtransmission Component					
Guard Structures[1]	31	150’ x 75’	8.0	8.0	0.0
Remove Existing Subtransmission Wood Poles/Wood Guy Stub Poles [1]	35	150’ x 75’	9.0	9.0	0.0
Remove LWS Poles[1]	5	150’ x 150’	2.6	2.6	0.0
Construct New TSPs[1]	30	200’ x 150’	20.7	18.9	1.7
Construct LWS Poles[1]	12	150’ x 75’	3.1	3.0	0.1
Construct New Wood Poles/Wood Guy Stub Poles[1]	266	150’ x 75’	69.0	66.3	2.7
Anchors	165	50’ x 50’	9.5	7.8	1.7
Reconfigure Pole Tops[2]	51	50’ x 50’	2.9	2.9	0.0
Stringing Conductor/Cable (Pull & Tension) Setup Area[3]	43	300’ x 100’	30.0	30.0	0.0

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Stringing Conductor/Cable (Splicing) Setup Area[3]	12	150’ x 100’	4.1	4.1	0.0
Install Underground Trench, Conduit, and Cable[4]	1,600	Linear feet x 30’ wide	1.2	1.2	0.0
Install Underground Vault[5]	3	100’ x 100’	0.7	0.7	0.0
Access Locations[6]	303	Varies	7.7	0.0	7.7
Permanent Access Roads[7]	1	400’ x 18’	0.2	0.0	0.2
Material Staging Yards[8]	4	Acres	11.0	11.0	0.0
Total Estimated[9]			**179.7**	**165.5**	**14.2**
Distribution Relocation Component					
Remove Existing Distribution Wood Poles/Wood Guy Stub Poles[10]	230	50’ x 50’	13.2	13.2	0.0
Install Underground Trench, Conduit, and Cable[11]	900	Linear feet x 30’ wide	0.6	0.6	0.0
Total Estimated [9]			**13.8**	**13.8**	**0.0**

Notes:

1 Includes structure assembly and erection, structure removal, conductor and/or OHGW installation, conductor transfer, conductor removal, and conductor splicing; non-permanent area to be returned/restored after construction. The permanent area of disturbance includes that portion of ROW within 25 feet of a TSP or 10 feet of an LWS pole, wood pole, wood down guy, or anchor and will remain cleared of vegetation; permanently disturbed area is approximately 0.06acres per TSP, 0.01acre per LWS wood pole, wood down guy, or anchor.

2 Reconfigure pole tops from single circuit to double circuit.

3 Based on 6,000 feet conductor/cable reel lengths, number of circuits, and route design.

4 Includes installing trench, conduit, cable, and full encasement duct bank (300 feet within the substation and 1,300 feet outside the fence of Valley Substation).

5 Includes structure assembly and installing the vault. Area to be restored after construction. Portion of ROW within 10 feet of the vault to remain cleared of vegetation. Permanently disturbed area for vault is 0.006 acre. Permanent disturbance for all three vaults totals 0.018 acre.

6 Based on an average 50 foot length by road width (which varies from 14 to 32 feet, curve-widening, intersections, and miscellaneous transitional areas) for approximately 303 pole sites. Although access is only needed temporarily across this area until such time that the proposed and/or dedicated public streets are improved to ultimate build out as identified in the General Plan Circulation Element, the area is being classified as permanent disturbance for environmental review and evaluation purposes.

7 Based on 400 feet length of road multiplied by road width of 14 feet plus a 2-foot shoulder on each side of road; does not include existing access roads that do not require civil design.

8 Material staging yards could be used as a reporting location for workers, vehicle and equipment parking, and/or material

Project Feature	Site Quantity	Disturbance Acreage Calculation (L x W)	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
storage. [9] The disturbed acreage calculations are estimates based upon SCE's preferred area of use for construction work for the described project feature; these estimates are subject to revision based upon final engineering. [10] Includes the removal of existing conductor and teardown of existing structures. [11] Includes installing trench, conduit, and cable for distribution facilities.					

3.7.2.3 Conductor/Cable Installation

3.7.2.3.1 Above Ground

Wire stringing activities would be in accordance with SCE common practices and similar to process methods detailed in the IEEE Standard 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors*. To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished.

Wire stringing includes all activities associated with the installation of the primary conductors onto transmission line structures. These activities include the installation of conductor, ground wire (OHGW/OPGW), insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, suspension and dead-end hardware assemblies for the entire length of the route.

The following five steps describe typical wire-stringing activities:

- **Step 1 – Planning:** Develop a wire-stringing plan to determine the sequence of wire pulls and the set-up locations for the wire pull/tensioning/splicing equipment
- **Step 2 – Sock Line Threading:** A bucket truck is typically used to install a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull
- **Step 3 – P ulling:** The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel
- **Step 4 – S plicing, Sagging, and Dead-Ending:** Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures
- **Step 5 – Clipping-In:** After the conductor is dead-ended, the conductors would be secured to all tangent structures; a process called clipping in. Once this is complete,

spacers would be attached between the bundled conductors of each phase to keep uniform separation between each conductor

Also see Figure 3.7 Proposed Pull & Tension Sites, Splicing Sites & Guard Structures.

Transfers of existing telecommunications facilities would consist of installing new cross arms and/or hardware on the new poles, removing the cable from the existing pole and attaching to the new pole, then removing the cross arms and/or hardware from the existing pole.

3.7.2.2.4 Below Ground

Following vault and duct bank installation (described in Sections 3.7.3.1.2 and 3.7.3.1.3), SCE would pull the electrical cables through the duct banks, splice the cable segments at each vault, and terminate the cables at the transition structures where the subtransmission line would transition from underground to overhead. To pull the cables through the duct banks, a cable reel would be placed at one end of the conduit segment, and a pulling rig would be placed at the opposite end. The cable from the cable reel would be attached to a rope in the duct bank and the rope linked to the pulling rig, which would pull the rope and the attached cable through the duct banks. A lubricant would be applied as the cable enters the ducts to decrease friction and facilitate travel through the PVC conduits. The electrical cables for the 115 kV subtransmission line would typically be pulled through the individual conduits in the duct bank at a rate of two to three segments between vaults per day.

After cable pulling is completed, the electrical cables would be spliced together. A splice crew would conduct splicing operations at each vault location and continue until all splicing is completed.

3.7.2.2.5 Guard Structures

SCE estimates that approximately 31 guard structures would need to be constructed at 17 locations along the proposed route. Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings for wire-stringing/removal activities. Typical guard structures are standard wood poles that are temporarily installed prior to stringing operations to stop the movement of a conductor should it momentarily drop below a conventional stringing height. Depending on the overall spacing of the conductors being installed, approximately two to four guard poles would be required on either side of a crossing. In other locations, i.e., low-traffic roads or shared driveways, SCE would use modified boom trucks to protect the crossing and/or flagmen with would be used to for control traffic control. At highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place. In some cases, specifically equipped boom trucks could be substituted for guard structures because they would already be located at the site for general construction activities. A biological monitor would assist with the placement of the guard structures to ensure impacts to special status resources are avoided to the extent feasible. Applicant Proposed Measures (APMs), described in Table 3.13, would limit impacts to special status resources to less than significant levels.

Decisions regarding whether to use guard structures or boom trucks would be determined during construction. For construction of the Proposed Project, SCE would work closely with the applicable jurisdiction to secure the necessary permits to string conductor over the applicable infrastructure.

Table 3.6 Proposed Guard Structure Locations lists the locations and type of guard methods that is expected to be employed at each of the locations along with the type of crossing to be protected. These locations and methods are approximate and subject to change based on final engineering.

Table 3.6 Proposed Guard Structure Locations

Guard Structure Number	Location[1]	Guard Method[2]	Crossing Type
1	West side of Briggs Road, South of Private Road/McLaughlin Road	GS & TC	Road
2	East side of Briggs Road, South of Private Road/McLaughlin Road	GS & TC	Road
3	West side of Briggs Road and north side of Case Road	GS	Road
4	East side of Briggs Road and north side of Case Road	GS	Road
5	North side of Grand Avenue, East of Leon Road	GS	Road
6	South side of Grand Avenue, East of Leon Road	GS	Road
7	Leon Road at train track at~700 feet south of Grand Avenue	GS/BT[3]	Train Track
8	East side of Leon Road, North of Simpson Road	GS	Road
9	West side of Leon Road, South of Simpson Road	GS	Road
10	West side of Leon Road, North of Domenigoni Parkway	GS/TC	Road & Street Light
11	West side of Leon Road, South of Domenigoni Parkway	GS/TC	Road & Traffic Signal
12	North side of Holland Road at Leon	GS	Road

Guard Structure Number	Location[1]	Guard Method[2]	Crossing Type
	Road		
13	South side of Holland Road at Leon Road	GS	Road
14	East side of Leon Road at north side of Wickerd Road	GS	Road
15	East side of Leon Road at south side of Wickerd Road	GS	Road
16	East side of Leon Road, North of Scott Road	GS	Road & Distribution OH
17	West side of Leon Road, South of Scott Road	GS	Road & Distribution OH
18	West side of Leon Road, ~700 feet North of Jean-Nicholas Road	GS/TC	Road
19	East side of Leon Road, ~575 feet North of Jean-Nicholas Road	GS/TC	Road
20	East side of Leon Road at north side of Jean-Nicholas Road	GS/TC	Road
21	East side of Leon Road at south side of Jean-Nicholas Road	GS/TC	Road
22	Old Leon Road at North Corner of Winchester Road & Max Gillis Boulevard	GS/TC	Road
23	Old Leon Road at South Corner of Winchester Road & Thompson Road	GS/TC	Road
24	North side of Benton Road at Leon Road	GS/TC	Road
25	South side of Benton Road at Leon Road	GS/TC	Road
26	North side of Auld Road at Leon Road	GS/TC	Road & Distribution OH
27	South side of Auld Road at Leon Road	GS/TC	Road & Distribution OH
28	North side of Murrieta Hot Springs Road and Chandler Drive	GS/TC	Road
29	South side of Murrieta Hot Springs	GS/TC	Road

Guard Structure Number	Location[1]	Guard Method[2]	Crossing Type
	Road and Chandler Drive		
30	North side of Nicolas Road ~970 feet west of Calle Medusa	GS/TC	Road & Distribution OH
31	South side of Nicolas Road ~970 feet west of Calle Medusa	GS/TC	Road & Distribution OH

Notes:
*Acronyms: BT = boom truck; OH = overhead; GS = guard structure; TC = traffic control

1 These crossing locations, which have been identified based on preliminary engineering, could be protected with guard structures, boom trucks, and/or traffic control when subtransmission conductor span sections are being pulled. These locations may be subject to change upon further review and requirements as identified in the final engineering. (Also, please refer to Figure 3.7 Proposed Pull & Tension Sites, Splicing Sites and Guard Structures).

2 The methods used to guard the various crossings would be wood pole type guard structures (GS), or specially modified boom trucks or cranes (BT), or flagmen controlling traffic (TC).

3 A boom truck will be utilized in the area adjacent to the railroad track.

3.7.3 Subtransmission Line Construction (Below Ground)

The following sections describe the below-ground construction activities associated with installing the subtransmission line segments for the Proposed Project.

3.7.3.1 Trenching

3.7.3.1.1 Subtransmission Survey

Construction activities would begin with the survey of existing underground utilities along the proposed underground subtransmission source line route. SCE would notify all applicable utilities via Underground Service Alert to locate and mark existing utilities and conducting exploratory excavations (potholing) as necessary to verify the location of existing utilities. SCE would secure encroachment permits for trenching in public streets, as required.

3.7.3.1.2 Subtransmission Trenching

The Proposed Project includes a total of approximately 1,800 feet of new underground 115 kV subtransmission lines and associated transition and support structures. An approximately 20- to 24-inch wide by 60-inch deep trench would be required to place the 115 kV subtransmission line underground. This depth is required to meet the minimum 36 inches of cover above the duct bank. Trenching may be performed by using the following general steps, including but not limited to: mark the location and applicable underground utilities, lay out trench line, saw cut asphalt or concrete pavement as necessary, dig to appropriate depth with a backhoe or similar equipment, and install the new duct bank. Once the duct bank has been installed, the trench would typically be backfilled with a cement slurry mix. Excavated materials would be reused as fill for the Proposed Project and/or be disposed of at an off-site disposal facility in accordance with applicable laws. A list of likely off-site disposal facilities within a 50-mile radius of the Proposed Project is included in Table 3.7 Off-Site Disposal Facilities. Should groundwater be encountered, it would be pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

Table 3.7 Off-Site Disposal Facilities

Disposal Facility	City	Distance
Lamb Canyon Landfill	Beaumont	Approximately 20 miles driving distance from Valley Substation
San Timoteo Sanitary Landfill	Redlands	Approximately 30 miles driving distance from Valley Substation
Mid Valley Landfill	Rialto	Approximately 41 miles driving distance from Valley Substation

The trench for underground construction would be widened and shored where appropriate to meet California Occupation and Safety Health Administration (CAL-OSHA) requirements. Trenching would be staged so that open trench lengths would not exceed that which is required to install the duct banks. Where needed, open trench sections would have steel plates placed over them in order to maintain vehicular and pedestrian traffic. Provisions for emergency vehicle access would be arranged with local jurisdictions in advance of construction activities.

In the event that potentially contaminated soil is encountered during excavation of the trench, work would stop at that location and SCE's Spill Response Coordinator would be called to the site to make an assessment and notify the proper authorities. Work would continue at that location only when given clearance by the Spill Response Coordinator. The potentially contaminated soil would be segregated into lined stockpiles or, placed in dump trucks or roll-off containers, sampled, and tested to determine appropriate handling, treatment and disposal options. If the soil is classified as hazardous, it would be properly managed on location and transported in accordance with United States Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility. All hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE protocols designed to protect the environment, workers, and the public.

3.7.3.1.3 Subtransmission Vault Installation

Vaults are below-grade concrete enclosures where the duct banks terminate. The vaults are constructed of prefabricated steel-reinforced concrete and designed to withstand heavy truck traffic loading. The inside dimensions of the underground vaults would be approximately 10 feet wide by 20 feet long with an inside height of 9.5 feet. The vaults would be placed approximately 500 to 1,500 feet apart along the underground portion of the subtransmission source line.

Initially, the vaults would be used as pulling locations to pull cable through the conduits. After the cable is installed, the vaults would be utilized to splice the cables together. During operation, the vaults would provide access to the underground cables for maintenance, inspections, and repairs.

Installation of each vault would typically take place over a one-week period depending on soil conditions. First, the vault pit would be excavated and shored; a minimum of 6 inches of mechanically compacted aggregate base would be placed to cover the entire bottom of the pit, followed by delivery and installation of the vault. Once the vault is set, grade rings and the vault casting would be added and set to match the existing grade. The excavated area would be backfilled with a sand slurry mix to a point just below the top of the vault roof. Excavated materials, if suitable, would be used to backfill the remainder of the excavation and any excess spoils would be disposed of at an off-site disposal facility in accordance with all applicable laws. Finally, the excavated area would be restored as required.

3.7.3.1.4 Fiber Optic Installation

This section is not applicable to the Proposed Project.

3.7.3.2 Trenchless Techniques: Microtunnel, Bo re and Jack, Horiz ontal Directional Drilling

The Proposed Project would not utilize trenchless techniques to support construction activities.

3.7.4 Substation Construction

The following section describes the construction activities associated with installing the components of the Valley and Triton Substations for the Proposed Project.

3.7.4.1 Site Preparation and Grading

The areas where the ground is disturbed, to accommodate these facilities, will be backfilled with native on-site soil and compacted to 90- to 95-percent relative compaction. These areas are currently covered with ¾-inch crushed aggregate rock and would be restored back to the same condition upon completion.

3.7.4.2 Ground Surface Improvements

This section is not applicable to the Proposed Project.

3.7.4.3 Below-Grade Construction

Modifications to below-grade facilities located at Valley Substation include, but are not limited to, installation of a ground grid, equipment foundations, conduits, duct banks, vaults, and manholes. Below-grade construction would involve the drilling and digging of holes for the foundations. For additional information regarding below-grade construction, see sections 3.7.3.1.2 and 3.7.3.1.3.

3.7.4.4 Above-Grade Construction

Above-grade installation of substation facilities such as buses, capacitor banks, switchracks, disconnect switches, circuit breakers, and steel support structures would follow the construction of the below-grade facilities. Installation of such facilities within the existing Valley Substation will include making connections or utilizing existing buses, cable trenches, and steel structures to integrate the new facilities in with the existing.

3.7.4.5 Distribution Gateway Construction

This section is not applicable to the Proposed Project.

3.7.4.6 Telecommunications Equipment Installation

The new telecommunications equipment would be installed at the existing Valley and Triton Substations. All new telecommunications equipment installations at the existing substations would occur within the existing MEER; therefore, no additional ground disturbance is associated with this proposed substation work.

Existing roads in the Proposed Project area are adequate to provide access for installation of the proposed telecommunication facilities.

3.7.4.7 Landscaping

There are no landscape plans required for the Proposed Project.

3.7.4.8 Substation Land Disturbance Table

This section is not applicable to the Proposed Project.

3.7.4.9 Modifications at Other Facilities

The following section describes the construction activities associated with modifying the components of SCE's existing Valley Substation for the Proposed Project.

New equipment foundations would be required and would result in soil excavation that would be exported. The approximate surface area and volumes for the below-grade components of the modifications proposed at SCE's existing Valley Substation are shown in Table 3.8 Substation Cut and Fill Grading Summary.

Table 3.8 Substation Cut and Fill Grading Summary

Element	Material	Approximate Surface Area (Square Feet)	Approximate Volume (Cubic Yards)
Substation equipment foundations, cut	Soil	366	82.44
Other Surfacing	Concrete	366	67.63

3.7.4.10 Land Disturbance Summary

Land disturbance would include all areas affected by construction of the Proposed Project. It is estimated that the total permanent land disturbance for the Proposed Project would be 14.2 acres, while the temporary land disturbance would be 179 acres. The estimated amount of land disturbance for each project component is summarized in Table 3.9 Valley South 115 kV Subtransmission Project Estimated Land Disturbance.

Table 3.9 Valley South 115 kV Subtransmission Project Estimated Land Disturbance

Project Feature	Acres Disturbed During Construction	Acres to be Restored	Acres Permanently Disturbed
Subtransmission	179.7	165.5	14.2
Distribution Relocation	13.8	13.8	0
Total	**193.5**	**179.3**	**14.2**

3.7.5 Construction Workforce and Equipment

The estimated elements, materials, and number of personnel and equipment required for construction of the Proposed Project are summarized in Table 3.10-A through Table 3.10-C Construction Equipment and Workforce Estimate.

Construction would be performed by either SCE construction crews or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substation, transmission ROW, etc.) or a temporary material staging yard set up for the Proposed Project. Contractor construction personnel would be managed by SCE construction management personnel and based out of the contractor's existing yard, SCE's substation, or temporary material staging yard set up for the Proposed Project. SCE anticipates a total of approximately 67 construction personnel working on any given day. SCE anticipates that crews would work concurrently whenever possible; however, the estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling.

In general, construction efforts would occur in accordance with accepted construction industry standards. If feasible, SCE would comply with local ordinances for construction activities.

Subtransmission

Construction would be performed by either SCE construction crews and/or contractors. SCE anticipates that crews would work concurrently from time to time, depending on material availability and construction scheduling. SCE anticipates a total of approximately 55 subtransmission and distribution construction personnel working on any given day on this project component.

Table 3.10-A Subtransmission Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Survey[1]				**4**	**15**		**15.4 Miles**
1-Ton Truck, 4x4	300	Gas	2			8	
Marshalling Yard[2]				**4**			
1-Ton Truck, 4x4	300	Gas	1		Duration of Project At Each Yard	4	
R/T Forklift	125	Diesel	1			6	
Boom/Crane Truck	350	Diesel	1			2	
Water Truck	300	Diesel	1			8	
Truck, Semi-Tractor	400	Diesel	1			2	
Roads & Landing Work[3]				**5**	**39**		**400 feet & 303 Pads**
1-Ton Truck, 4x4	300	Gas	1			8	
Backhoe/Front Loader	125	Diesel	1			4	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Track Type Dozer	150	Diesel	1			4	
Motor Grader	250	Diesel	1			6	
Water Truck	300	Diesel	1			8	
Drum Type Compactor	100	Diesel	1			6	
Excavator	250	Diesel	1			4	
Lowboy Truck/Trailer	450	Diesel	1			4	
Tree Trim & Removal				**5**	**12**		**27 Trees**
1-Ton Truck	300	Gas	1			8	
Debris Haul Truck	300	Diesel	1			8	
Manlift/Bucket Truck	250	Diesel	1			8	
Chipper	48	Diesel	1			8	
Stump Grinder	30	Diesel	1			4	
Guard Structure Installation[4]				**6**	**9**		**31 Structures**
3/4-Ton Truck, 4x4	275	Gas	1			8	
1-Ton Truck, 4x4	300	Gas	1			8	
Compressor Trailer	60	Diesel	1			4	
Manlift/Bucket Truck	250	Diesel	1			4	
Boom/Crane Truck	350	Diesel	1			6	
Auger Truck	210	Diesel	1			4	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Extendable Flat Bed Pole Truck	400	Diesel	1			8	
Relocate Existing Conductor and OHGW[5]				**20**	**7**		**3.4 Circuit Miles**
1-Ton Truck, 4x4	300	Gas	2			4	
Manlift/Bucket Truck	250	Diesel	2			8	
Boom/Crane Truck	350	Diesel	2			8	
Bull Wheel Puller	350	Diesel	1			6	
Sock Line Puller	300	Diesel	1			6	
Static Truck/ Tensioner	350	Diesel	1			6	
Material Handling Truck	315	Diesel	1			8	
Lowboy Truck/Trailer	450	Diesel	2			4	
Wood/Wood Guy Stub Pole/LWS Pole Removal[6]				**6**	**6**		**40 Poles**
1-Ton Truck, 4x4	300	Gas	2			8	
Compressor Trailer	60	Diesel	1			4	
Backhoe/Front Loader	125	Diesel	1			6	
Manlift/Bucket Truck	250	Diesel	1			6	
Boom/Crane Truck	350	Diesel	1			6	
Flat Bed Pole	400	Diesel	1			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Truck							
Install TSP Foundations[7]				**6**	**60**		**30 TSPs**
3/4-Ton Truck, 4x4	275	Gas	1			4	
Boom/Crane Truck	350	Diesel	1			4	
Backhoe/Front Loader	125	Diesel	1			6	
Auger Truck	210	Diesel	1			6	
Water Truck	300	Diesel	1			8	
Dump Truck	350	Diesel	1			4	
Material Handling Truck	315	Diesel	1			8	
Concrete Mixer Truck	350	Diesel	3			2	
TSP Haul[8]				**4**	**9**		**30 TSPs**
3/4-Ton Truck, 4x4	275	Gas	1			8	
Boom/Crane Truck	350	Diesel	1			6	
Flat Bed Pole Truck	400	Diesel	1			8	
TSP Assembly[9]				**8**	**30**		**30 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2			4	
1-Ton Truck, 4x4	300	Gas	2			4	
Compressor Trailer	60	Diesel	1			6	
Material	315	Diesel	1			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Handling Truck							
Boom/Crane Truck	350	Diesel	1			8	
TSP Erection[10]				**8**	**30**		**30 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2			4	
1-Ton Truck, 4x4	300	Gas	2			4	
Compressor Trailer	60	Diesel	1			4	
Boom/Crane Truck	350	Diesel	1			8	
Wood/Wood Guy Stub Pole/LWS Pole Haul[11]				**4**	**47**		**266 Wood & 12 LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	1			8	
Boom/Crane Truck	350	Diesel	1			6	
Flat Bed Pole Truck	400	Diesel	1			8	
Wood/LWS Pole Assembly[12]				**8**	**65**		**266 Wood & 12 LWS Poles**
3/4-Ton Truck, 4x4	275	Gas	2			4	
1-Ton Truck, 4x4	300	Gas	2			4	
Compressor Trailer	60	Diesel	1			6	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Material Handling Truck	315	Diesel	1			8	
Boom/Crane Truck	350	Diesel	1			8	
Install Wood/Wood Guy Stub Pole/LWS Pole/Anchor[13]				**6**	**70**		**278 Poles**
1-Ton Truck, 4x4	300	Gas	1			8	
Manlift/Bucket Truck	250	Diesel	1			6	
Boom/Crane Truck	350	Diesel	1			6	
Auger Truck	210	Diesel	1			4	
Backhoe/Front Loader	125	Diesel	1			8	
Material Handling Truck	315	Diesel	1			8	
Extendable Flat Bed Pole Truck	400	Diesel	1			8	
Reconfigure Existing Structures[14]				**20**	**13**		**51 Structures**
3/4-Ton Truck, 4x4	275	Gas	2			4	
1-Ton Truck, 4x4	300	Gas	2			4	
Compressor Trailer	60	Diesel	1			6	
Material Handling Truck	315	Diesel	1			8	
Boom/Crane Truck	350	Diesel	1			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Install Conductor & Ground Wire[15]				**24**	**75**		**15.4 Miles Conductor 9 Circuit Miles Ground Wire**
1-Ton Truck, 4x4	300	Gas	3			4	
Manlift/Bucket Truck	250	Diesel	4			8	
Boom/Crane Truck	350	Diesel	1			8	
Boom/Truck (guard)	350	Diesel	4			2	
Dump Truck	350	Diesel	1			2	
Wire Truck/ Trailer	350	Diesel	2			6	
Sock Line Puller	300	Diesel	1			6	
Bull Wheel Puller	350	Diesel	1			6	
Static Truck/ Tensioner	350	Diesel	1			6	
Backhoe/Front Loader	125	Diesel	1			2	
Material Handling Truck	315	Diesel	1			8	
Lowboy Truck/Trailer	450	Diesel	2			4	
Guard Structure Removal[16]				**6**	**9**		**31 Structures**
3/4-Ton Truck, 4x4	275	Gas	1			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
1-Ton Truck, 4x4	300	Gas	1			8	
Compressor Trailer	60	Diesel	1			4	
Manlift/Bucket Truck	250	Diesel	1			4	
Boom/Crane Truck	350	Diesel	1			6	
Extendable Flat Bed Pole Truck	400	Diesel	1			8	
Backhoe/Front Loader	125	Diesel	1			6	
Restoration[17]				**7**	**15**		**15.4 Miles**
1-Ton Truck, 4x4	300	Gas	2			4	
Backhoe/Front Loader	125	Diesel	1			4	
Motor Grader	250	Diesel	1			6	
Water Truck	300	Diesel	1			8	
Drum Type Compactor	100	Diesel	1			4	
Lowboy Truck/Trailer	450	Diesel	1			4	
Vault Installation[18]				**6**	**9**		**3 Vaults**
1-Ton Truck, 4x4	300	Gas	2			4	
Backhoe/Front Loader	125	Diesel	1			8	
Excavator	250	Diesel	1			6	
Dump Truck	350	Diesel	2			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Water Truck	300	Diesel	1			8	
Crane (L)	500	Diesel	1			6	
Concrete Mixer Truck	350	Diesel	3			2	
Lowboy Truck/Trailer	450	Diesel	1			4	
Material Handling Truck	315	Diesel	1			8	
Flat Bed Truck/Trailer	400	Diesel	3			4	
Duct Bank Installation[19]				**6**	**7**		**1,600 Feet Trench**
1-Ton Truck, 4x4	300	Gas	2			4	
Compressor Trailer	60	Diesel	1			4	
Backhoe/Front Loader	125	Diesel	1			6	
Dump Truck	350	Diesel	2			6	
Pipe Truck/Trailer	275	Diesel	1			6	
Water Truck	300	Diesel	1			8	
Concrete Mixer Truck	350	Diesel	3			2	
Lowboy Truck/Trailer	450	Diesel	1			4	
Install Underground Cable[20]				**8**	**2**		**1,800 Feet**
1-Ton Truck, 4x4	300	Gas	2			4	
Manlift/Bucket Truck	250	Diesel	1			6	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Boom/Crane Truck	350	Diesel	1			6	
Wire Truck/Trailer	350	Diesel	2			6	
Pulling Rig	350	Diesel	1			6	
Material Handling Truck	315	Diesel	1			8	
Static Truck/ Tensioner	350	Diesel	1			6	
DISTRIBUTION RELOCATION							
Relocate Existing Conductor[21]				**4**	**167**		**8 miles**
Foreman Truck	300	Diesel	1			8	
Reel Truck	300	Diesel	1			8	
Bucket Truck	300	Diesel	1			8	
Arrow Board Trailer	0	Solar/ Electric	1			8	
Flatbed Truck	400	Diesel	1			8	
Wood Pole Removal[22]				**3**	**41**		**230 Wood Poles**
Foreman Truck	300	Diesel	1			8	
Lineman/Boom Truck	300	Diesel	1			8	
Flatbed Trailer	400	Diesel	1			8	
Arrow Board Trailer	0	Solar/ Electric	1			8	
Install Distribution Underground Cable[23]				**7**	**20**		**900 Feet**
Crew Truck	300	Diesel	1			8	
Foreman Truck	300	Diesel	1			8	
Reel Truck	300	Diesel	1			8	

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production
Rodder Truck	400	Diesel	1			8	
Concrete Mixer Truck	350	Diesel	1			8	
1-Ton Truck, 4x4	300	Gas	1			8	
Backhoe/Front Loader	125	Diesel	1			8	
Lowboy Truck/Trailer	450	Diesel	1			8	

Notes:

All data provided in this table is based on planning-level assumptions and may change based on any of the following: the completion of final engineering; any updates and/or changes in project scope; any updates and/or changes to the project description; any changes to existing field conditions and/or the identification of yet unknown field conditions; outage constraints; the availability of labor, material, and equipment; as well as any constraints caused by environmental and/or permitting requirements.

[1] Survey = one 4-man crew
[2] Marshalling Yards = one 4-man crew
[3] Roads & Landing Work = one 5-man crew
[4] Guard structure installation = one 6-man crew
[5] Relocate Existing Conductor & Ground Wires = two 10-man crews
[6] Remove Existing Wood/Wood Guy Stub Poles/LWS Poles = one 6-man crew
[7] Install Foundations for TSPs = one 6-man crew
[8] TSP Haul = one 4-man crew
[9] TSP Assembly = one 8-man crew
[10] TSP Erection = one 8-man crew
[11] Wood/Wood Guy Stub Pole/LWS Pole Haul = one 4-man crew
[12] Wood/LWS Pole Assembly = one 8-man crew
[13] Install Wood/Wood Guy Stub Pole/LWS Pole/Anchor = one 8-man crew
[14] Reconfigure Existing Structures = two 10-man crews
[15] Conductor Installation = two 10-man crews
[16] Guard Structure Removal = one 6-man crew
[17] Restoration = one 7-man crew, It is estimated that 2 of the 12 miles will not require restoration efforts based on current access and field conditions.
[18] Vault Installation = one 6-man crew
[19] Duct Bank Installation = one 6-man crew
[20] Install Underground Cable = one 8-man crew
[21] Relocate Existing Conductor = one 4-man crew
[22] Remove Existing Wood Poles = one 4-man crew
[23] Underground Cable Installation = one 4-man crew

Substation

Construction would be performed by either SCE construction crews and/or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substation, transmission ROW, etc.) or a temporary material staging yard set up for the Proposed Project. SCE anticipates a total of approximately 10 construction personnel working on any given day on this project component. SCE anticipates that crews would work concurrently from time to time, depending on factors such as material availability, resource availability, and construction scheduling.

In general, construction efforts would occur in accordance with accepted construction industry standards. If feasible, SCE would comply with local ordinances for construction activities.

Table 3.10-B Substation Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Days)	Estimated Production
Boom Truck	300	Diesel	1	2	30	7	N/A
Crew Truck	200	Diesel or Gasoline	3	2	40	2	N/A
Flat Bed	300	Diesel	1	2	40	2	N/A
Lift Truck	200	Gasoline	1	2	30	7	N/A
Tool Trailer	N/A	Electric	1	2	40	8	N/A
Skid Steer	80	Diesel	1	1	15	7	N/A
Backhoe	80	Diesel	1	1	15	7	N/A
Dump Truck	350	Diesel	3	1	15	7	N/A
Water Truck	350	Diesel	1	1	15	7	N/A
Foundation Auger	80	Diesel	1	1	5	7	N/A
Concrete Mixer Truck	350	Diesel	4	1	5	4	N/A

Telecommunication

Construction would be performed by either SCE construction crews or contractors. SCE anticipates that crews would work concurrently from time to time depending on permitting, material availability, and construction scheduling.

SCE anticipates a total of approximately seven construction personnel working on any given day on this project component.

Table 3.10-C Telecommunication System Construction Equipment and Workforce Estimates

Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hours)	Estimated Production Per Day (poles)
Bucket Truck	300	Diesel	2	4	4	8	8
Pick Up Truck	250	Diesel	1	1	4	8	N/A
Van	200	Gasoline	2	2	2	4	8

3.7.5.1 Equipment Description

Table 3.11 Construction Equipment Description lists the equipment SCE expects to use during construction and a brief description of the use of that equipment.

Table 3.11 Construction Equipment Description

Equipment Type	Use Description
1-Ton Truck, 4x4	Transport workers and material
3/4-Ton Truck, 4x4	Transport workers and material
Arrow Board Trailer	Traffic control sign
Auger Truck	Light/medium duty - dig holes for poles
Backhoe/Front Loader	Medium duty - grades soil, loads dirt into dump trucks
Boom/Crane Truck	Light/medium duty - lifts/places material
Bucket Truck	Lift and transport workers
Bull Wheel Puller	Provides tension on conductor/ground wire during stringing operation
Chipper	Breaks down trees/vegetation after removal
Compressor Trailer	Provides compressed air for pneumatic tools
Concrete Mixer Truck	Delivers and mixes concrete for job site

Equipment Type	Use Description
Crane (L)	Heavy duty - lifts/places material
Crew Truck	Transports workers and materials
Debris Haul Truck	Hauls removed trees/vegetation
Drum Type Compactor	Compacts soil
Dump Truck	Imports/exports material
Excavator	Excavates and/or moves native soil
Extendable Flat Bed Pole Truck	Hauls poles
Flat Bed Pole Truck	Hauls poles
Flat Bed Truck/Trailer	Hauls material
Lowboy Truck/Trailer	Hauls material
Manlift/Bucket Truck	Lifts and transports workers
Material Handling Truck	Hauls material
Motor Grader	Medium duty - grades terrain
Pick-up Truck	Transport workers and material
Pipe Truck/Trailer	Hauls material
Puller	Pulls conductor/ground wire during stringing operation
Rodder Truck	Cable installation
Reel Truck	Cable and wire hauling
R/T Forklift	Lifts and transports material in rough terrain
Sock Line Puller	Pulls sock line during stringing operation
Static Truck/ Tensioner	Provides tension on conductor/ground wire during stringing operation
Stump Grinder	Grinds down tree stump after tree removal
Track Type Dozer	Heavy duty - grades terrain
Truck, Semi-Tractor	Transports material
Van	Transport workers and material
Water Truck	Wets access roads to mitigate fugitive dust/ improve compaction
Wire Truck/Trailer	Hauls conductor/ground wire to job site, hold conductor/ground wire during stringing operation

3.7.6 Construction Schedule

SCE anticipates that construction of the Proposed Project would take approximately 16 months.[6] Construction would commence following CPUC approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

The anticipated operational date of January 2020 assumes a 26-month CPUC regulatory review and a 16-month construction schedule. However, the operating date may be accelerated if the regulatory process can be expedited or SCE can further compress its construction schedule.

Table 3.12 Proposed Construction Schedule

Project Activity	Approximate Duration (Months)	Approximate Start Date
PTC	N/A	February 2017
Final Engineering	11	January 2017
Right-of-way/Property Acquisition	8	December 2016
Acquisition of Required Permits	12	March 2017
Substation Construction	6	March 2018
Subtransmission Line Construction	16	June 2018
Telecommunications Construction	3	July 2019
Distribution Construction	3	July 2019
Clean up	3	November 2019
Project Operational	N/A	January 2020

3.7.7 Energizing Transmission and Subtransmission Lines

Energizing the new lines is the final step in completing the transmission and subtransmission construction. The existing 115 kV circuits: Valley-Auld, Valley-MWD-Stetson, Valley-Auld-Triton, Auld-Moraga #2, and Pauba-Triton; the existing 33 kV circuit: Skinner; and existing 12 kV circuits: Flats, Livermore, Equinox, Sundance, Appaloosa, Keller, Colt, Shetland, Beeler, Shipley, and Argonaut, would be de-energized in order to connect the new line segments to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing lines may occur at night when electrical demand is low.

[6] The proposed construction schedule does not account for unforeseen project delays, including but not limited to those due to inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds).

3.8 Operation and Maintenance

Ongoing Operation and Maintenance (O&M) activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public, as mandated by the CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under operational control of the California Independent System Operator.

The subtransmission line would be maintained in a manner consistent with CPUC G.O. 95 and G.O. 128 as applicable, and the National Electrical Safety Code (NESC) for those circuits that are located outside of California. Normal operation of the lines would be controlled remotely through SCE control systems, and manually in the field as required. SCE inspects the subtransmission overhead facilities in a manner consistent with CPUC G.O. 165 a minimum of once per year via ground, but usually occurs more frequently based on system reliability. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles and towers, tree trimming, brush and weed control, and access road maintenance. Most regular O&M activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing poles and towers, could occur in undisturbed areas. Existing conductors could require re-stringing to repair damages. Some pulling site locations could be in previously undisturbed areas and at times, conductors could be passed through existing vegetation on route to their destination.

Routine access road maintenance is conducted on an annual and/or as-needed basis. Road maintenance includes maintaining a vegetation-free corridor (to facilitate access and for fire prevention) and blading to smooth over washouts, eroded areas, and washboard surfaces as needed. Access road maintenance could include brushing (i.e., trimming or removal of shrubs) approximately 2 to 5 feet beyond berms or road's edge when necessary to keep vegetation from intruding into the roadway. Road maintenance would also include cleaning ditches, moving and establishing berms, clearing and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance includes the repair, replacement and installation of storm water diversion devices on an as-needed basis.

Insulators could require periodic washing with water to prevent the buildup of contaminants (dust, salts, droppings, smog, condensation, etc.) and reduce the possibility of electrical arcing, which can result in circuit outages and potential fire. Frequency of insulator washing is region specific and based on local conditions and build-up of contaminants. Replacement of insulators, hardware, and other components is performed as needed to maintain circuit reliability.

Some pole locations and/or lay down areas could be in previously undisturbed areas and could result in ground and/or vegetation disturbance, though attempts would be made to utilize previously disturbed areas to the greatest extent possible. In some cases new access is created to remove and replace an existing pole. Wood pole testing and treating is a necessary maintenance activity conducted to evaluate the condition of wood structures both above and below ground level. Intrusive inspections require the temporary removal of soil around the base of the pole, usually to a depth of approximately 12 to 18 inches, to check for signs of deterioration. Roads and trails are utilized for access to poles. For impact prevention, all soil removed for intrusive inspections would be reinstalled and compacted at completion of the testing.

Existing conductors could require re-stringing to repair damages. Some pulling site locations could be in previously undisturbed areas and, at times, conductors could be passed through existing vegetation on route to their destination.

Regular tree pruning must be performed to be in compliance with existing state and federal laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters. Tree pruning standards for distances from overhead lines have been set by the CPUC (G.O. 95, Rule 35), California Public Resource Code 4293, California Code of Regulations Title 14, Article 4, and other government and regulatory agencies. SCE's standard approach to tree pruning is to remove at least the minimum required by law plus one years' growth (species dependent).

In addition to maintaining vegetation-free access roads, helipads and clearances around electrical lines, clearance of brush and weeds around poles, and as may be required by applicable regulations on fee owned ROWs, is necessary for fire protection. A 10-foot radial clearance around non-exempt poles (as defined by California Code of Regulations Title 14, Article 4) and a 25-50 foot radial clearance around non-exempt towers (as defined by California Code of Regulations Title 14, Article 4) are maintained in accordance with Public Resource Code 4292.

In addition to regular O&M activities, SCE conducts a wide variety of emergency repairs in response to emergency situations such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed poles or lines or re-stringing conductors. Emergency repairs could be needed at any time.

The telecommunications equipment would be subject to maintenance and repair activities on an as needed or emergency basis. Activities would include replacing defective circuit boards, damaged radio antennas or feedlines and testing the equipment. Telecommunication equipment would also be subject to routine inspection and preventative maintenance such as filter change-outs or software and hardware upgrades. Most regular O&M activities of telecommunications equipment are performed at substation or communication sites and inside the equipment rooms and are accessed from existing access roads with no surface disturbance. Access road maintenance is performed as mentioned in the Project Operations Transmission and Subtransmission section above.

The telecommunications cables would be maintained on an as needed or emergency basis. Maintenance activities would include patrolling, testing, repairing and replacing damaged cable and hardware. Most regular maintenance activities of overhead facilities are performed from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing cables and re-stringing cables, could occur in undisturbed areas. Access and habitat restoration, as mentioned in the Project Operations Transmission and Subtransmission section above, may be required for routine or emergency maintenance activities.

3.9 Applicant Proposed Measures

As part of the Proposed Project SCE has identified 16 Applicant Proposed Measures (APMs) that it plans to implement during construction and/or operation of the Proposed Project to reduce or avoid impacts. SCE would conduct the design, construction, operation, and maintenance of the Proposed Project in accordance with its APMs. The proposed APMs are listed in Table 3.13 Applicant Proposed Measures.

Table 3.13 Applicant Proposed Measures

Resource Section	Resource	APM Number	APM Description
4.3	Air Quality	APM AIR-1	Construction crew vehicle speeds on non-public unpaved roadways would be restricted to 15 miles per hour.
		APM AIR-2	Dust suppression would be implemented on all active nonpublic unpaved access roadways (e.g. using water or chemical suppressant).
		APM AIR-3	Off-road diesel construction equipment with a rating between 100 and 750 horsepower would be required to use engines compliant with U.S. Environmental Protection Agency Tier 3 non-road engine standards. In the event a Tier 3 engine is not available, that engine would be equipped with a Tier 2 engine and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled off-road construction equipment or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 2 engine is not available, that engine would be equipped with a Tier 1 engine and documentation would be provided.
4.4	Biology	APM BIO-1	**Preconstruction Survey s and Construction Monitoring** – Preconstruction biological clearance surveys shall be performed at specific construction and other work sites where potential biological resources are located to minimize impacts on special status wildlife and plant species. If special status species are present, biological monitors shall be on-site, as needed, and shall aid crews in implementing avoidance measures during construction. Special status species observations and avoidance measures will be reported to the appropriate wildlife agencies

Resource Section	Resource	APM Number	APM Description
			prior to construction in that area. In addition, appropriate agencies will be provided a monthly report summarizing all special status species observations and avoidance measures.
		APM BIO-2	**Nesting Bird Preconstruction S urveys –** SCE would conduct preconstruction clearance surveys no more than 7 days prior to construction to determine the location of nesting birds and territories. Nesting survey results and avoidance measures, if applicable, will be reported to the appropriate wildlife agencies prior to construction in that area. An avian biologist would establish a buffer area around active nest(s) and would monitor construction activities. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. A monthly report summarizing all active nest observations and avoidance measures will be provided to the appropriate agencies on a monthly basis, during the nesting season, or until all active nests have been determined to be inactive.
		APM BIO-3	**Nesting Bird Management Plan–** SCE shall develop a Nesting Bird Management Plan with input from CDFW. The plan shall include (1) nest management and avoidance; (2) field approach (survey methodology, reporting, and monitoring), including information related to areas of occupied habitat for coastal California gnatcatcher; and (3) avian biologist qualifications. Avian biologist(s) shall be subject to review and approval by CDFW, and shall be responsible for determining the buffer area around active nest(s). Biological monitors shall monitor nests and construction activities.
		APM BIO-4	**Avian Safe Design –** The 115 kV subtransmission structures would be designed consistent with the Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (Avian Power Line Interaction Committee, 2006).
		APM BIO-5	**Stephens' Kangaroo Rat and Los Angeles Pocket Mouse Mitigation an d Avoidance -** An SCE qualified biologist shall conduct preconstruction

Resource Section	Resource	APM Number	APM Description
			surveys (see APM BIO-1) in suitable habitat for Stephens' kangaroo rat and Los Angeles pocket mouse at specific work areas along the Proposed Project and Alternative Project for impact avoidance and minimization. To address impacts to Stephens' kangaroo rat, within the boundaries of the Stephens' Kangaroo Rat HCP, SCE shall apply to participate in the plan through an agreement with the Riverside County Habitat Conservation Agency (Riverside County, 1996). To address impacts to Los Angeles pocket mouse, within the boundaries of the WRCMSHCP Plan Area, SCE shall apply to participate in the WRCMSHCP and shall follow provisions of the WRCMSHCP as they apply to this species. Stephens' kangaroo rat and Los Angeles pocket mouse observations and avoidance measures will be reported to the appropriate wildlife agencies prior to construction in that area. In addition, appropriate agencies will be provided a monthly report summarizing all special status species observations and avoidance measures.
		APM BIO-6	**Burrowing Ow l Preconstruction Surveys and Monitoring -** A preconstruction nonprotocol burrowing owl survey shall be conducted no more than 30 days prior to commencement of ground-disturbing activities within suitable habitat to determine if any occupied burrows are present. SCE would establish a buffer area around active nest(s) and would monitor construction activities. If occupied burrows or other evidence of presence are found, adequate buffers shall be established around burrows. Adequate buffers shall be 160 feet from occupied wintering burrows (December 1 through January 31) and 250 feet from occupied breeding burrows during the breeding season (February 1 through August 31). A qualified avian specialist may increase or reduce these buffer distances on a case-by-case basis. Biologists shall monitor all construction activities that have the potential to impact active burrows.

Resource Section	Resource	APM Number	APM Description
			In addition, potential unavoidable impacts to burrowing owl and its habitat shall be mitigated by participation in the WRCMSHCP. SCE's participation, as a PSE, shall include following the provisions and measures outlined in the WRCMSHCP. All reporting requirements would be conducted as described in APMs BIO-1 and BIO-2.
		APM BIO-7	**Coastal California Gnatcatcher Impact Minimization and Mitigation –** Avoidance of active nests shall be accomplished through APMs BIO-2 and BIO-3, described above. In areas of occupied habitat for the coastal California gnatcatcher, a buffer area around active nest(s) would be established by the SCE biologist and provided to USFWS and CDFW for concurrence. The buffer would be established based on construction activities, potential noise disturbance levels, and behavior of the species. Construction activities in occupied habitat/suitable habitat for the coastal California gnatcatcher will be monitored by a qualified biologist. SCE shall apply to participate in the WRCMSHCP and shall follow provisions of the WRCMSHCP as they apply to coastal California gnatcatcher. Where Proposed Project design allows, SCE shall avoid or minimize impacts to Diegan and coastal sage scrub vegetation. All reporting requirements would be conducted as described in APMs BIO-1 and BIO-2.
		APM BIO-8	**Listed Riparian Birds Impact Minimiz ation –** Based on current design, SCE shall avoid direct construction impacts to riparian and other wetland habitats suitable for listed riparian bird species (least Bell's vireo, southwestern willow flycatcher). Avoidance of active nests shall be accomplished through APMs BIO-2 and BIO-3, described above. All reporting requirements would be conducted as described in APMs BIO-1 and BIO-2.

Resource Section	Resource	APM Number	APM Description
		APM BIO-9	**Quino Checkerspot Butterfly Impact Minimization and Mitigation** – To address impacts to Quino checkerspot butterfly, within the boundaries of the WRCMSHCP Plan Area, SCE shall apply to participate in the WRCMSHCP and shall follow the provisions of the WRCMSHCP as they apply to this species. All reporting requirements would be conducted as described in APMs BIO-1 and BIO-2.
		APM BIO-10	**Vernal Pool Resources –** A qualified biologist shall conduct preconstruction marking of previously mapped basins suitable to support vernal pool species within the potential Proposed Project Impact Corridor and depict them on construction plans with specifications for avoidance. Facts about the vernal pool habitat and potential impacts from construction and O&M activities shall be included in the WEAP materials. Wet season protocol level surveys for special status vernal pool resources will be conducted prior to construction. If special status species are detected, SCE shall follow the provisions of the WRCMSHCP as they apply to these species. All reporting requirements would be conducted as described in APMs BIO-1 and BIO-2.
4.5	Cultural Resources	APM CUL-1	Impacts to sensitive paleontological resources would be reduced with implementation of a Paleontological Resources Management Plan.
4.16	Traffic and Transportation	APM TRA-1	Traffic control or other management plans would be prepared where necessary to minimize Proposed Project impacts on local streets, highways (State Route [SR]74 and SR-79), freeways, or other forms of transportation (Class I and Class II bicycle routes).
		APM TRA-2	Where the Proposed Project work area encroaches on a public right-of-way (ROW) and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing would be provided during construction activities.

3.9.1 Environmental Surveys

SCE has conducted biological and cultural/paleontological resources studies and would conduct further focused biological surveys after project approval, but prior to the start of construction. These surveys would identify and/or address any potential sensitive biological resources that may be impacted by the Proposed Project, including the subtransmission line route(s), access roads, construction work areas, and staging yards. Where feasible, the information gathered from these surveys may be used to finalize project design in order to avoid sensitive resources, or to minimize the potential impact to sensitive resources from project-related activities. The results of these surveys would also determine the extent to which environmental specialist construction monitors would be required.

Biological resources in the vicinity of the Proposed Project are presented in detail in Section 4.4, Biological Resources.

Due to drought conditions in 2013 and 2014, additional biological surveys may be conducted in early 2015 to better assess the potential for WRCMSHCP Criteria Area Plant Species or federal and state listed Fairy Shrimp (See Chapter 4.4 for additional information). Adequate conditions permitting, the focused surveys may be conducted spring and winter of 2015 and submitted to the CPUC in a separate report.

Biological surveys are expected to be conducted prior to construction; however, the following biological surveys have been conducted as of spring 2014:

- Vegetation mapping. Vegetation mapping following the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland, 1986) identifying vegetation communities within the Proposed Project alignment and 500-foot buffer around the Proposed Project alignment.
- Floristic Surveys (spring only). Focused plant surveys were conducted for narrow endemic plant and WRCMSHCP criteria area plant species with the potential to occur within the vicinity of the Proposed Project. The special-status plant surveys followed guidelines developed by California Natural Plant Society to identify sensitive species that have the potential to be present in the area.
- Jurisdictional Drainages and Riparian and Riverine Surveys. A wetland delineation was conducted to describe and map the extent of resources under the jurisdiction of the United States Army Corps of Engineers (USACE), the RWQCB or State Water Resources Control Board (SWRCB), the CDFW, and/or the WRCMSHCP following the guidelines presented in the Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region and other applicable agency guidance documents.
- Wet-season fairy shrimp surveys. A wet-season fairy shrimp survey was conducted in conformance with USFWS Vernal Pool Branchiopods Presence/Absence Survey Guidelines, issued April 19, 1996 for the Proposed Project. The survey sampled for fairy shrimp and were identified by species.

- Dry-season fairy shrimp surveys. A dry-season fairy shrimp survey was conducted in conformance with USFWS Vernal Pool Branchiopods Presence/Absence Survey Guidelines, issued April 19, 1996 for the Proposed Project. The survey sampled for fairy shrimp cysts, and the cysts were identified by species.
- Focused breeding raptor survey. Focused breeding raptor surveys were conducted during breeding season (generally February 1 to August 31) for the Proposed Project. The surveys took place within Segment 1 of the Proposed Project and within a 1-mile buffer zone, and 500 feet of Segment 2 of the Proposed Project.
- Focused burrowing owl survey. Focused burrowing owl surveys were conducted in the areas affected by the Proposed Project following WRCMSHCP and CDFW Guidelines.
- Focused Small Mammal Habitat Assessment/Trapping. Focused surveys for Stephens' kangaroo rat and other small mammals with the potential to occur in the vicinity of the Proposed Project was conducted for the Proposed Project. These assessments and surveys were conducted during the appropriate time of year to detect the species.
- Focused Least Bell's Vireo. Focused surveys for least Bell's vireo were conducted in areas classified as potential habitat. The surveys were conducted according to the USFWS Least Bell's Survey Guidelines (USFWS, 2001).
- Focused Southwestern Willow Flycatcher. Focused surveys for southwestern willow flycatcher were conducted in areas classified as potential habitat. The surveys were conducted according to the USFWS survey guidelines (USFWS, 2000).

Within thirty days prior to the start of ground-disturbing activity, the following surveys would be conducted:

- Clearance Surveys – A clearance survey would be conducted no more than 30 days prior to the start of construction in a particular area to identify potential plant and animal species that may be impacted by construction activities. Clearance surveys include a field survey by a qualified botanist and wildlife biologist and would be limited to areas directly impacted by construction activities.
- Active Nests – Work near nesting habitat would be scheduled to take place outside the nesting season when feasible. Within one week to the start of construction in a particular area during nesting season (generally February 1 to August 31), a qualified wildlife biologist would conduct a pre-construction focused nesting survey. If occupied nests are present during the nesting season, SCE biologists would determine appropriate nesting buffers based on a project-specific nesting bird management plan or consultation with the appropriate agencies.

Cultural and paleontological resources in the vicinity of the Proposed Project are presented in detail in Section 4.5, Cultural Resources.

3.9.2 Worker Environmental Awareness Training

Prior to construction, a WEAP would be developed. A presentation would be prepared by SCE and used to train all site personnel prior to the commencement of work. A record of all trained personnel would be kept. In addition to instruction on compliance with any additional APMs and project mitigation measures developed after the pre-construction surveys, all construction personnel would also receive the following:

- A list of phone numbers of SCE environmental specialist personnel associated with the Proposed Project (archaeologist, biologist, environmental coordinator, and regional spill response coordinator);
- Instruction on the South Coast Air Quality Management District fugitive dust rules;
- A description of applicable noise construction time and/or noise level limits
- A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic and paleontological preservation, a discussion of disciplinary and other actions that could be taken against persons violating historic and paleontological preservation laws and SCE policies, a review of paleontology, archaeology, history, prehistory and Native American cultures associated with historical and paleontological resources in the project vicinity inclusive of instruction on what typical cultural and paleontological resources look like, and instruction that if discovered during construction, work is to be suspended in the vicinity of any find and the site foreman and SCE Project Archaeologist or environmental compliance coordinator is to be contacted for further direction;
- Instruction on the roles of environmental monitors (cultural, paleontological and biological), if present, and the appropriate treatment by on-site personnel of areas designated as Environmentally Sensitive Areas (ESAs).
- Instruction on the importance of maintaining the construction site inclusive of ensuring all food scraps, wrappers, food containers, cans, bottles, and other trash from the Project area would be deposited in closed trash containers. Trash containers would be removed from the Project as required and would not be permitted to overfill;
- Instruction on the individual responsibilities under the Clean Water Act, the project SWPPP, site-specific BMPs, and the location of Safety Data Sheets for the project;
- Instructions to notify the foreman and regional spill response coordinator in case of a hazardous materials spill or leak from equipment, or upon the discovery of soil or groundwater contamination
- Instructions to cover all holes/trenches at the end of each day
- A copy of the truck routes to be used for material delivery
- Instruction that noncompliance with any laws, rules, regulations, or mitigation measures could result in being barred from participating in any remaining construction activities associated with the Proposed Project

3.9.3 Traffic Control

Construction activities completed within public street ROW would require the use of a traffic control service. If required, these traffic control services would be conducted in accordance with applicable requirements. These traffic control measures would be consistent with those published in the California Joint Utility Traffic Control Manual (California Inter-Utility Coordinating Committee, 2010).

3.10 Generator Interconnection Facilities Description

This section is not applicable to the Proposed Project.

3.11 Generator Interconnection Facilities Construction

This section is not applicable to the Proposed Project.

3.12 Other Major Components Description

Other major components, such as, underground water lines, gas pipelines, and water wells have not been identified in the Proposed Project area during preliminary engineering design.

3.13 Other Major Components Construction

As noted above, other major components, such as, underground water lines, gas pipelines, and water wells have not been identified in the Proposed Project area during preliminary engineering design. Therefore, construction activities for new infrastructure are not associated with the Proposed Project at this time. In the event existing infrastructure is discovered during final engineering, SCE will consider all major existing components and coordinate the relocation if necessary.

3.14 Decommissioning

This section is not applicable to the Proposed Project.

3.15 Project Alternatives Components Description

The Alternative 115 kV subtransmission line (Alternative Project) would be approximately 19 miles in length and would extend approximately 3.6 miles longer than the Proposed 115 kV subtransmission line (Proposed Project). The Alternative Project would follow an identical route to that of the Proposed Project for approximately 11.6 miles. The Alternative Project also would include the same improvements as the Proposed Project.

At the location where the Alternative Project would deviate from the Proposed Project, the Alternative Project would extend further west and would be located in the City of Murrieta for a longer distance. The Alternative Project would continue west along Scott Road to the intersection of Menifee Road, and then would continue south on Menifee Road for approximately 3 miles, following an existing SCE 115 kV subtransmission line to the intersection of unimproved Clinton Keith Road. From Clinton Keith Road, it would extend east, until reaching an existing TSP on Benton Road and then extending south along Leon Road until the Alternative Project reaches the Terminal TSP just south of Nicolas Road.

Both the Proposed and Alternative Projects meet the project objectives and follow existing SCE facilities to the extent feasible. However, the Alternative Project is closer to a greater number of sensitive receptors. Additionally, the Alternative Project has the potential to create greater overall impacts to critical habitats, cultural resources, and traffic during construction of the route along SR-79, and may require additional regulatory permits. For these reasons, the Alternative Project was not selected as the proposed subtransmission line route.

An explanation of how the Alternative Project has the potential to create greater overall impacts to critical habitats can be found in Section 4.4, Biological Resources. The Biological Resources section also will explain the types of regulatory permits that may be required. Additionally, a description of how the Alternative Project has the potential to create greater overall impacts to cultural resources can be found in Section 4.5, Cultural and Paleontological Resources, and an explanation of how the Alternative Project has the potential to create greater overall impacts to traffic can be discovered in the Section 4.16, Transportation and Traffic. Furthermore, additional information can be found in Chapter 5 – Comparison of Alternatives.

VALLEY SOUTH 115 KV SUBTRANSMISSION PROJECT

FIGURE 3.8

Southern California Edison

Segment 1 & Segment 2 Locations