**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, for a Permit to Construct the Cabrillo – Santa Ynez 115 kV Power Line Reconductoring Project Pursuant to General Order 131-D (U 39 E)	Application No.

EXHIBIT A

PROPONENT'S ENVIRONMENTAL ASSESSMENT FOR THE APPLICATION OF PACIFIC GAS AND ELECTRIC COMPANY FOR A PERMIT TO CONSTRUCT THE CABRILLO – SANTA YNEZ 115 kV POWER LINE RECONDUCTORING PROJECT

WILLIAM MANHEIM
DAVID T. KRASKA
Law Department
Pacific Gas and Electric Company
Post Office Box 7442
San Francisco, CA 94120
Telephone: (415) 973-7503
Facsimile: (415) 972-5952
DTK5@pge.com

JO LYNN LAMBERT
Attorney at Law
707 Brookside Avenue
Redlands, CA 92373
Telephone: (909) 793-4942 or (415) 973-5248
Facsimile: (909) 793-8944
JLLm@pge.com

Attorneys for Applicant
PACIFIC GAS AND ELECTRIC COMPANY

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Cabrillo - Santa Ynez 115 kV Reconductoring Project Proponent's Environmental Assessment

Prepared for

Pacific Gas and Electric Company

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Prepared by

CH2MHILL

155 GRAND AVE, STE 1000

OAKLAND, CA 94611

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Acronyms and Abbreviations

AAC	All Aluminum Conductor
AB	Assembly Bill
APM	Applicant Proposed Measure
BO	Biological Opinion
BMP	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CDFG	California Department Fish and Game
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CMP	Congestion Management Program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
CSBPW	County of Santa Barbara Public Works
CSHM	California Seismic Hazard Map
CVC	California Vehicle Code
CWA	Clean Water Act
CWM	Chemical Waste Management
dBA	decibels, A-weighted
DNL	day-night level

DOC	California Department of Conservation
DTSC	California Environmental Protection Agency, Department of Toxic Substances Control
ESCP	Erosion and Sediment Control Plan
ETMP	Environmental Training and Monitoring Program
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
HCP	Habitat Conservation Plan
kV	kilovolt
LOS	Level of Service
LUDC	Land Use and Development Code
MCE	maximum credible earthquake
MCM	Multi-Chip Model
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NW	northwest
OSHA	Occupational Safety and Health Administration
PEA	Proponent's Environmental Assessment
PG&E	Pacific Gas and Electric Company
PGA	peak ground acceleration
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter

PTC	Permit to Construct
ROC	reactive organic compound
ROW	right-of-way
RTA-SCAT	Regional Transit Authority–South County Area Transit
S&HC	California Street and Highways Code
S.B.B. & M	San Bernardino Base and Meridian
SB	Senate Bill
SBCAG	Santa Barbara County Association of Governments
SBCAPCD	Santa Barbara County Air Pollution Control District
SBCFD	Santa Barbara County Fire Department
SBCSD	Santa Barbara County Sheriff's Department
SBCWA	Santa Barbara County Water Agency
SCEC	Southern California Earthquake Center
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMP	Traffic Management Plan
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
V/C	volume/capacity
Water Board	California Regional Water Quality Control Board

1.0 Summary

The Pacific Gas and Electric Company (PG&E) Cabrillo – Santa Ynez 115 kilovolt (kV) Reconductoring Project (Project) is needed to improve transmission system reliability for the Lompoc, Solvang, Buellton, and Santa Ynez areas. The Project Area runs from PG&E's Cabrillo Substation in Santa Barbara County, on the eastern side of Lompoc near State Route (SR) 1, 14.6 miles to the east to PG&E's Santa Ynez Switching Station, north of the City of Buellton along United States Highway 101 (US 101).

The Project consists of replacing the existing deteriorating conductor and replacing the supporting wood poles with light-duty steel poles along the 115 kV power line. The pole and conductor replacement will occur within the existing alignment. The Project is needed to improve transmission reliability, replace aging structures, and provide sufficient peak-period transmission voltage support for the Lompoc - Santa Ynez area.

This Proponent's Environmental Assessment (PEA) describes the environmental setting, regulations, and Applicant Proposed Measures (APMs) for minimizing potential effects and evaluates potential environmental impacts that could result from construction and operation of the Project. With implementation of the APMs, potential impacts would be less than significant.

As required by California Public Utilities Commission (CPUC) guidelines, Appendix G of the California Environmental Quality Act (CEQA) (hereafter referred to as the CEQA Checklist) was used as the format for describing potential impacts pursuant to CEQA. The CPUC, as lead agency, will review this information and will be responsible for preparing and providing public review of the Initial Study.

This PEA is organized in the following manner:

- Section 2.0, Project Description (includes Purpose and Need), provides a detailed description of the Project, purpose, and need.
- Section 3.0, Applicant's Proposed Measures, provides a summary of the APMs addressed in detail in the Section 4.0.
- Section 4.0, Impact Assessment Summary, subsections 4.1 through 4.12, provide environmental setting and analysis of all potential impacts to resource categories that might result from implementing the Project. Each subsection includes a description of the regulatory context, environmental setting, resource-specific APMs, and analysis of potential impacts resulting from construction, operation, and maintenance of the Project.
- Section 5.0, Cumulative Analysis, discuss the potential growth-inducing and cumulative impacts of the Project.

Appendices include technical reports and information referenced in the PEA sections, including:

- Appendix A - Air Quality Reference
- Appendix B - Biological Resources
- Appendix C - Cultural Resources
- Appendix D - Electric and Magnetic Fields
- Appendix E - Cumulative Impacts Reference
- Appendix F - Authors and Contributors
- Appendix G - Glossary
- Appendix H - Affected Property Owners

2.0 Project Description

2.1 Overview

The Cabrillo – Santa Ynez 115 kV Reconductoring Project is needed to improve transmission system reliability and provide sufficient peak-period transmission voltage support for the Lompoc, Solvang, Buellton, and Santa Ynez areas. The existing 4/0 All Aluminum Conductor (AAC) and connectors on approximately 14.1 miles of the existing single-circuit power line between Cabrillo Substation and Santa-Ynez Switching Station are corroding, leaving the existing line brittle and prone to failure. As proposed by PG&E, and as further described in the PEA, the Project includes:

- Replacing the existing single-circuit of 4/0 AAC conductor with a 715 Multi-Chip Model (MCM) AAC, non-specular conductor on approximately 14.1 miles of the existing 14.6-mile power line.
- Replacing the existing 128 wood poles (currently holding the 4/0 AAC conductor) with new light-duty steel poles along approximately 14.1 miles of the existing 14.6 miles of 115 kV power line. Since the existing poles cannot be removed before new poles are in place, the new poles will be installed typically within approximately 5 feet from the existing wood poles.

No work is required within substations or switching yards.

2.2 Project Objectives

The basic objectives of the Project are as follows:

- **Improve transmission system reliability by replacing deteriorated line and hardware,** which will reduce the frequency of line outages in the Lompoc - Santa Ynez area.
- **Improve transmission system reliability by replacing aging structures**, with new structures that are adequately sized to meet current clearance requirements. The Project will use an environmentally-friendly approach to design and construction that meets or exceeds the safety and design requirements of General Order 95 and complies with the CPUC policy encouraging the use of existing rights-of-way (ROW).
- **Provide increased voltage support** to ensure that the area's transmission system can provide sufficient voltage during high summer loads and peak operating conditions.

2.3 Project Location

The Project is located in Santa Barbara County between the cities of Lompoc and Buellton, California. The ROW runs roughly east-west, paralleling SR 246 between SR 1 in Lompoc and US 101 north of Buellton. This line connects Cabrillo Substation (12th and Industrial Street in Lompoc, California 93436) to Santa Ynez Switching Station (1811 Jonata Park Road in Buellton, California 93427) just west of US 101. The Project location is presented in Figure 2.3-1, Project Location.

Land use along the Project is primarily agricultural and rural residential. Agricultural uses include grazing lands, rotational crops, and vineyards. Cabrillo Substation is within a light industrial area in the eastern extent of the City of Lompoc. A rural residential community is located along approximately 2 miles of the ROW before the end of the Project near US 101.

The dominant vegetation communities along the pole line include coastal sage scrub, non-native grasslands, and riparian communities at the Santa Ynez River. Several seasonal or ephemeral creeks cross the river, including Santa Rosa Creek and Dry Creek.

The 14.1 miles of pole and conductor replacement are located within PG&E's existing 40-foot ROW. Access to the ROW will be along existing access roads currently used for line operations and maintenance.

2.4 Existing System

In the existing transmission system configuration, the Cabrillo - Santa Ynez 115 kV Power Line connects Cabrillo Substation to Santa Ynez Switching Station and comprises one section of an approximately 80-mile 115 kV transmission loop for the Lompoc - Santa Ynez area (originating and ending at Mesa Substation). The loop serves over 71,000 customers in the general area between Santa Maria, Lompoc, and Santa Ynez/Solvang. In the event of an outage to this line, over 14,000 customers, the entire area load being served by Cabrillo, Santa Ynez, Buellton, Zaca, and Palmer substations are served in a less-reliable radial fashion. Figure 2.4-1, Existing Local Transmission System, outlines PG&E transmission facilities within its south coastal service territory. This coastal climate produces foggy and windy conditions throughout the year that accelerates the deterioration of conductors and associated hardware, such as insulators, connectors, and dead-end shoes.

Figure 2.4-2, Existing Project Transmission System, depicts the current 115 kV transmission system configuration in the Lompoc - Santa Ynez area.

The Project includes reconductoring the section of the Cabrillo - Santa Ynez 115 kV Power Line between one half mile east of Cabrillo Substation to the Santa Ynez Switching Station, which is the portion of the line that currently consists of 4/0 AAC conductor. The remainder of the line extending into Cabrillo Substation does not need to be reconductored because the existing conductor is the heavier 715 MCM AAC conductor. Figure 2.4-2 shows the two sections of line with the different conductor types, as well as the transition point where the conductors change. The Project does not include any work on the first approximately one half mile of the line extending east of Cabrillo Substation, other than insulator replacement.

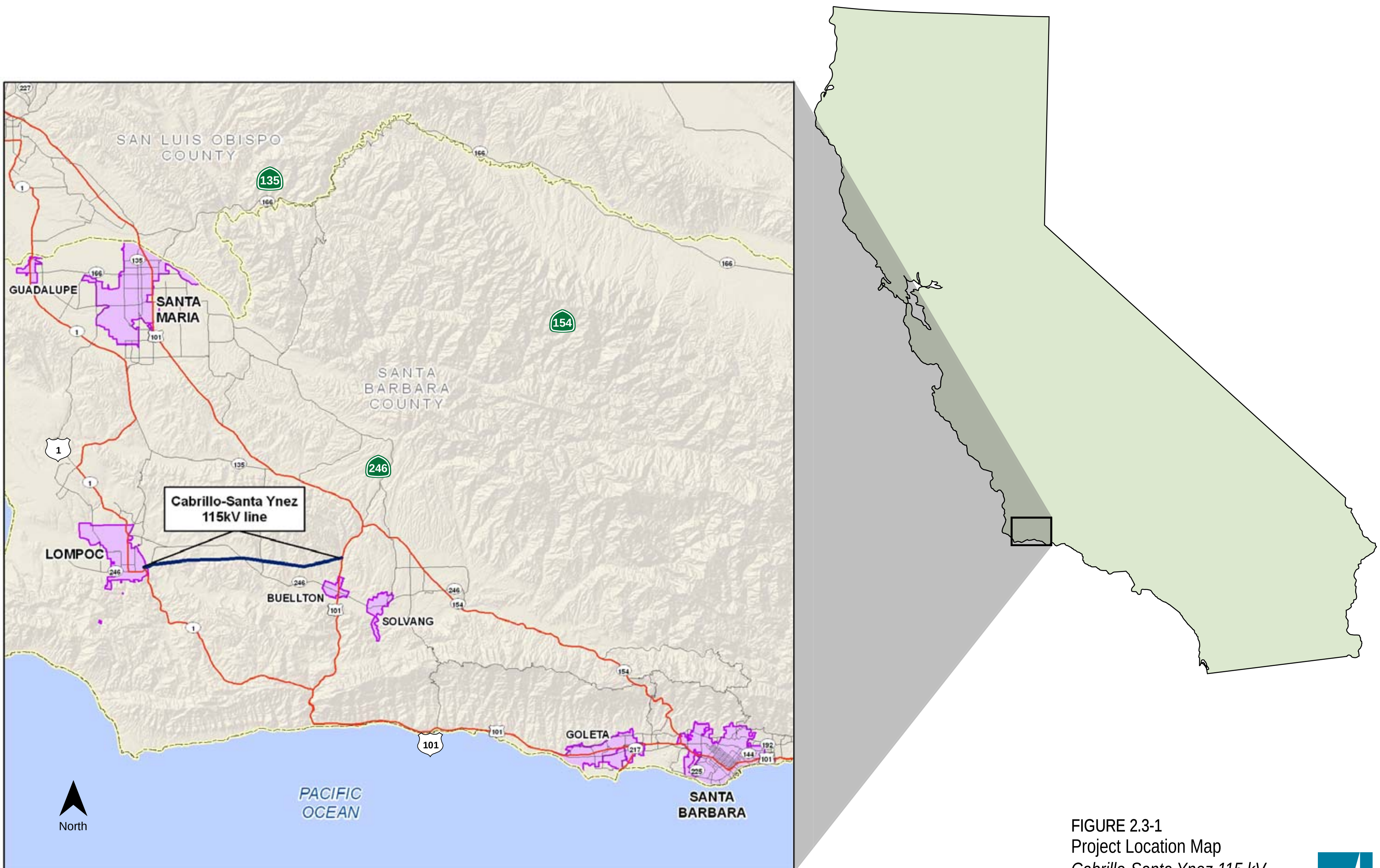
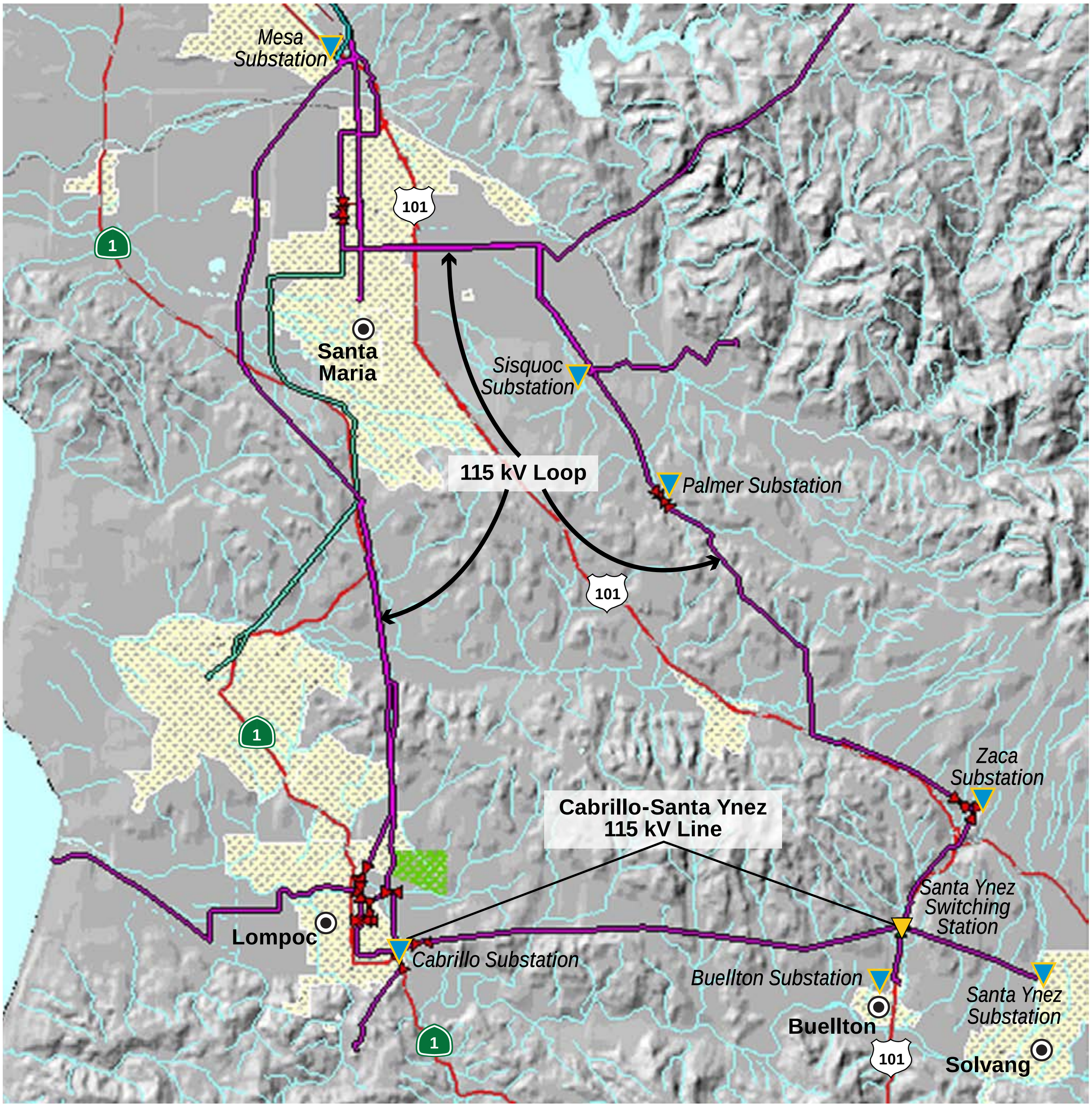


FIGURE 2.3-1
Project Location Map
Cabrillo-Santa Ynez 115 kV
Reconductoring Project

ES032009011BAO proj_location_map_v2.ai 041009_lho



Map source: PG&E

LEGEND

115 kV loop

Substation

Switching station

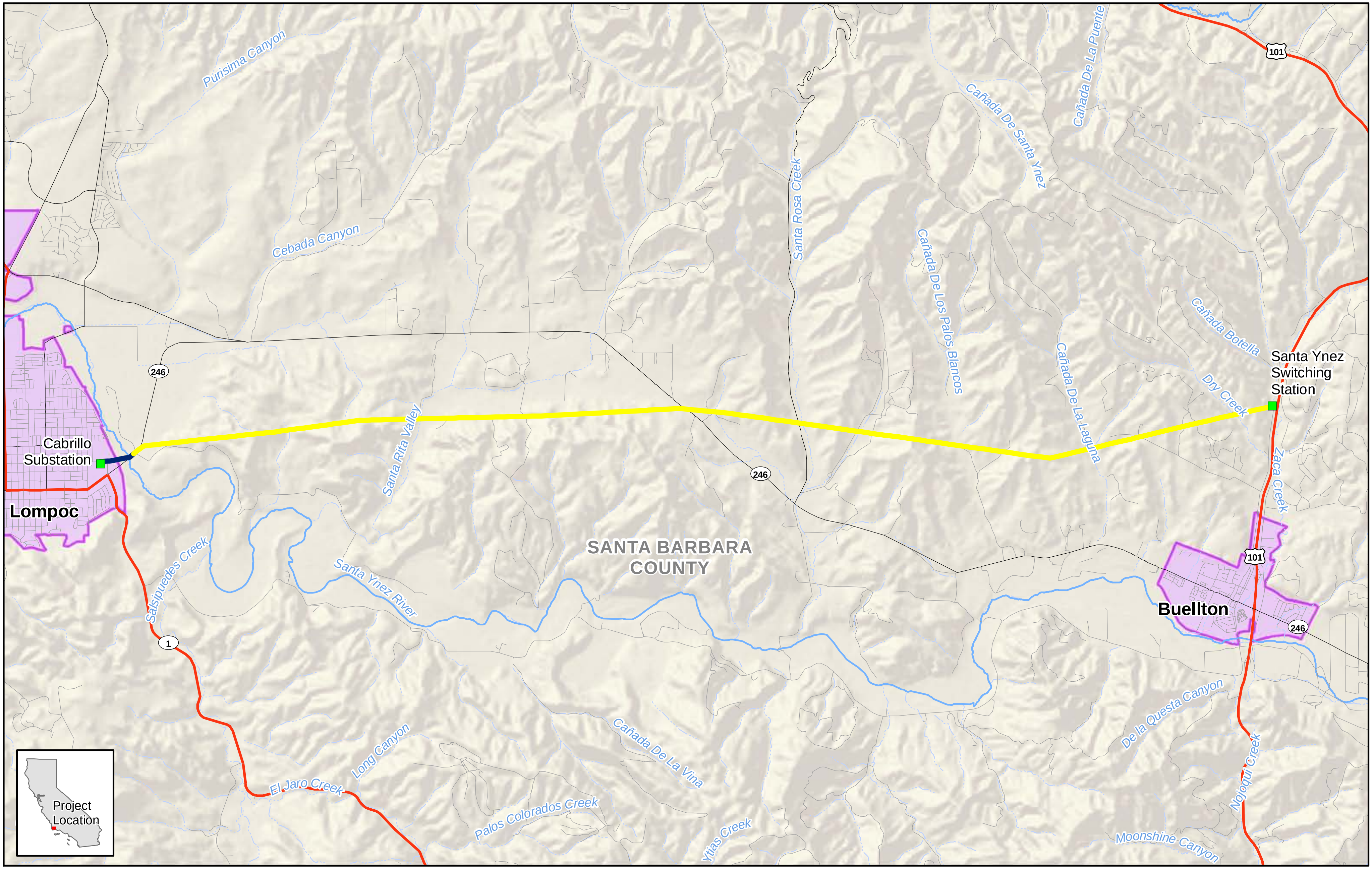
City

North

0 2 4

Approximate scale in miles

FIGURE 2.4-1
Existing Local Transmission System
Cabrillo-Santa Ynez 115 kV Reconducting Project



Substation

Work Proposed on Power Line

Reconductoring

Insulator Replacement Only

City Boundaries

Creeks

Rivers

Highway

Major Road

Local Road

Rev. 6: 06/29/2009

FIGURE 2.4-2
Existing Project
Transmission System
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 1 2 Miles

Scale:
1:100,000

2.5 Project Purpose and Need

This section discusses the purpose and need for the Project to provide general background information. The CPUC has documented on several occasions that need issues are beyond the scope of a Permit to Construct (PTC) application. See, for example, Assigned Commissioner's Ruling dated October 16, 2002, A.01-07-004, p. 5 ("the need for the project is outside the scope of this [Atlantic-Del Mar PTC] proceeding"); D.94-06-014, 55 CPUC 2d 87, 92 (PTC review "focuses solely on environmental concerns, unlike the CPCN process which considers the need for and economic cost of a proposed facility"); and General Order 131-D, Section IX.B.1.f ("an application for a permit to construct need not include…a detailed analysis of purpose and necessity").

The Cabrillo - Santa Ynez 115 kV Reconductoring Project is needed to improve transmission reliability and provide sufficient peak period transmission voltage for the Lompoc - Santa Ynez area. By reconductoring this line, PG&E will continue to provide safe and reliable electric service to customers in this area. The Cabrillo - Santa Ynez 115 kV Power Line (described in Section 2.4) is at risk of deteriorating beyond acceptable reliability levels. This reconductoring work will correct this situation, maintain compliance with applicable grid reliability criteria, and provide for sufficient transmission voltage in the area during peak and abnormal operating conditions.

2.5.1 System Reliability

During 2008, the Cabrillo - Santa Ynez 115 kV Power Line experienced six line outages due to equipment failure. Three of these outages were due to deteriorated conductor (including one connector failure), two were as a result of insulator failures, and one was due to a line switch flashover.

As discussed in Section 2.4, the existing Cabrillo - Santa Ynez 115 kV Power Line is primarily comprised of 4/0 AAC conductor. When this line was upgraded from 70 kV to 115 kV in 1988, distribution-style dead-end shoes were installed to cost-effectively provide strength and tensioning requirements for this line. Since this time, PG&E has discovered that this style of distribution dead-end shoe causes excessive bending of the conductor. These sharp bends, when exposed to the frequent local winds, create a cyclic fatigue in the conductor. Over time, this fatigue results in increased failures. Each failure resulted in the sustained loss of power to the Cabrillo - Santa Ynez 115 kV Power Line.

Coastal fog in the area also contributes to rapid deterioration of aluminum components. Smaller aluminum components (such as the existing 4/0 AAC conductor) deteriorate more rapidly with the coastal influence. The installation of new transmission-style dead-end shoes and new 715 MCM AAC conductor will result in greater circuit reliability for customers in the Lompoc - Santa Ynez area and reduced maintenance on the line. In addition, PG&E plans to install non-specular 715 MCM AAC conductor to minimize any visual effects caused by the new line installation.

2.5.2 Replace Aging Structures

The portion of the Project that will be reconductored is supported by wood poles that are roughly 21 years old. Built in 1988, these poles were designed to achieve proper clearances for conductor sag based on 4/0 AAC conductor and will not support proper clearance for the new, heavier conductor.

As part of this Project, PG&E will replace the 128 wood poles with new direct-buried, light-duty steel poles designed to meet General Order 95 clearance requirements for the new 715 MCM AAC conductor. Light-duty steel poles with a surface treatment designed to render the appearance of natural weathering are PG&E's new design standard. This pole design provides superior protection from wild fires, pole rotting, and woodpecker damage when compared to wood poles. The new structures will use a "raptor-friendly" design that has larger spacing between the conductors and steel supports to minimize bird contacts with the line.

2.5.3 Increased Voltage Support for the Loss of Sisquoc - Santa Ynez Switching Station 115 kV line

Reconductoring the line will ensure that the area's transmission system provides sufficient voltage during high summer loads and peak operating conditions.

In the event of an outage to the Sisquoc - Palmer section of the Sisquoc - Santa Ynez Switching Station 115 kV Power Line, PG&E's southern area transmission loop and all 115 kV substations in the area would be fed in a radial fashion from Cabrillo Substation. Figure 2.4-1 provides a visual overview of the transmission loop.

During peak load conditions, this radial configuration from Cabrillo Substation can result in low voltage to Buellton Substation and Santa Ynez Switching Station (along with Zaca and Palmer Substations). The normal operating lower limit is 109 kV (95 percent of 115 kV). The emergency operating lower limit is 103.5 kV (90 percent of 115 kV). During peak load conditions with only a radial feed, the voltage at Buellton and Santa Ynez will range from 103.7 to 103.9 kV. Table 2.5-1 lists the expected voltages on a peak day at Buellton and Santa Ynez due to the loss of the Sisquoc - Palmer 115 kV Power Line.

TABLE 2.5-1
Modeled Voltages for Santa Ynez Area Substations During Peak Conditions with Loss of the Sisquoc - Santa Ynez Switching Station 115 kV Line
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Substation/ Switching Station	System Contingency	Voltage Before Project	Voltage After Project
Buellton	Loss of Sisquoc - Palmer 115 kV Line Section	103.9 kV	105.9 kV
Santa Ynez	Loss of Sisquoc - Palmer 115 kV Line Section	103.7 kV	105.7 kV

To provide increased voltage support for this situation, PG&E plans to reconductor the portion of the Cabrillo - Santa Ynez 115 kV Power Line that currently uses 4/0 AAC conductor, converting it to 715 MCM AAC conductor. Although the resulting area substation voltages during this abnormal condition will be below normal operation limits, the voltages will remain above the lower emergency voltage operation limit.

Since the purpose of this Project is not to increase the capacity of the Cabrillo - Santa Ynez 115 kV circuit, switches and breakers at Cabrillo Substation and Santa Ynez Switching Station will not be replaced.

2.6 Proposed Project

The existing bare aluminum 115 kV conductor (4/0 AAC, seven–strand, 0.52–inch-diameter) will be replaced with a new 715 aluminum non-specular type conductor (715 MCM AAC, 0.97-inch-diameter) from Pole 7 to Pole 134, as shown in Figure 2.4-2. The existing 4/0 AAC conductor and connectors are corroded, and the new replacement 715 MCM AAC conductor and connectors are of a size that have been shown to better withstand coastal climates.

Additionally, the existing 128 wood poles supporting the 4/0 AAC conductor will be replaced with light-duty steel poles to support the new heavier conductor and to meet General Order 95 clearance standards. The above ground height of the new poles will be on average the same as the existing poles. In two specific areas (at the SR 246 crossing and in the proximity of a residential development on the east end of the Project), the above ground height of the new poles will average 10 - 12 feet taller that the existing poles. This increased height is necessary to provide adequate ground clearance for the new conductor being installed across SR 246, and to provide EMF minimization near the residential area. The new poles will be light-duty steel poles with a natural weathered surface treatment (rusty color). To minimize the potential for future insulator failures, insulators on the 134 poles between Cabrillo Substation and Santa Ynez Switching Station (including those on the section of the power line that will not be reconductored) will be replaced during the construction period to create a consistent age of insulators, thus optimizing operations and maintenance activities.

The Project will improve transmission system reliability within the 80-mile loop discussed in Section 2.4.2. Additionally, the Project provides increased voltage support within the loop for high summer loads and peak or unusual operating conditions. The Project's reconductoring is expected to provide long-term stability to the power line.

Project objectives do not include a capacity increase in megawatts (MW). The new 715 aluminum conductor proposed for the line addresses coastal climate deterioration and voltage support issues. Past experience with smaller aluminum conductors/connectors in the area demonstrates accelerated corrosion for sizes smaller than 715 MCM AAC. The new conductor has a summer coastal rating of 140 million volt-ampere normal and 160 million volt-ampere "emergency."

The Project area with Project components (existing and planned) and construction elements (re-establishment of existing access roads and temporary work areas, including access and helicopter use) are shown on the maps in Figure 2.6-1. Sections 2.7 through 2.9 address the Project components, ROW, and construction.

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 1
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 2
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 3
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 4
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 5
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

- Power Poles to be Replaced
- Power Poles Replaced by Helicopter
- Existing Power Poles
- Power Pole Sites with Expected Tree Management
- Power Line ROW (40')
- Laydown Area for Helicopter
- Potential Lay Down Area
- Potential Pull and Tension Site
- Potential Staging Area
- Power Pole Work Areas (40'x100')
- Rivers/Creeks
- County Roads
- Existing Access Road
- Existing Access Road Reestablished Through Grading and Vegetation Removal
- Overland Access Route

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FIGURE 2.6-1 Map 6
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 7
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 8
Project Components and Construction Elements
Cabrillo - Santa Ynez 115kV Reconductoring Project

N
0 300 600 Feet
Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 9
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 10
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

- Power Poles to be Replaced
- Power Poles Replaced by Helicopter
- Existing Power Poles
- Power Pole Sites with Expected Tree Management
- Power Line ROW (40')
- Laydown Area for Helicopter
- Potential Lay Down Area
- Potential Pull and Tension Site
- Potential Staging Area
- Power Pole Work Areas (40'x100')
- Rivers/Creeks
- County Roads
- Existing Access Road
- Existing Access Road Reestablished Through Grading and Vegetation Removal
- Overland Access Route

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FIGURE 2.6-1 Map 11
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

- Power Poles to be Replaced
- Power Poles Replaced by Helicopter
- Existing Power Poles
- Power Pole Sites with Expected Tree Management
- Power Line ROW (40')
- Laydown Area for Helicopter
- Potential Lay Down Area
- Potential Pull and Tension Site
- Potential Staging Area
- Power Pole Work Areas (40'x100')
- Rivers/Creeks
- County Roads
- Existing Access Road
- Existing Access Road Reestablished Through Grading and Vegetation Removal
- Overland Access Route

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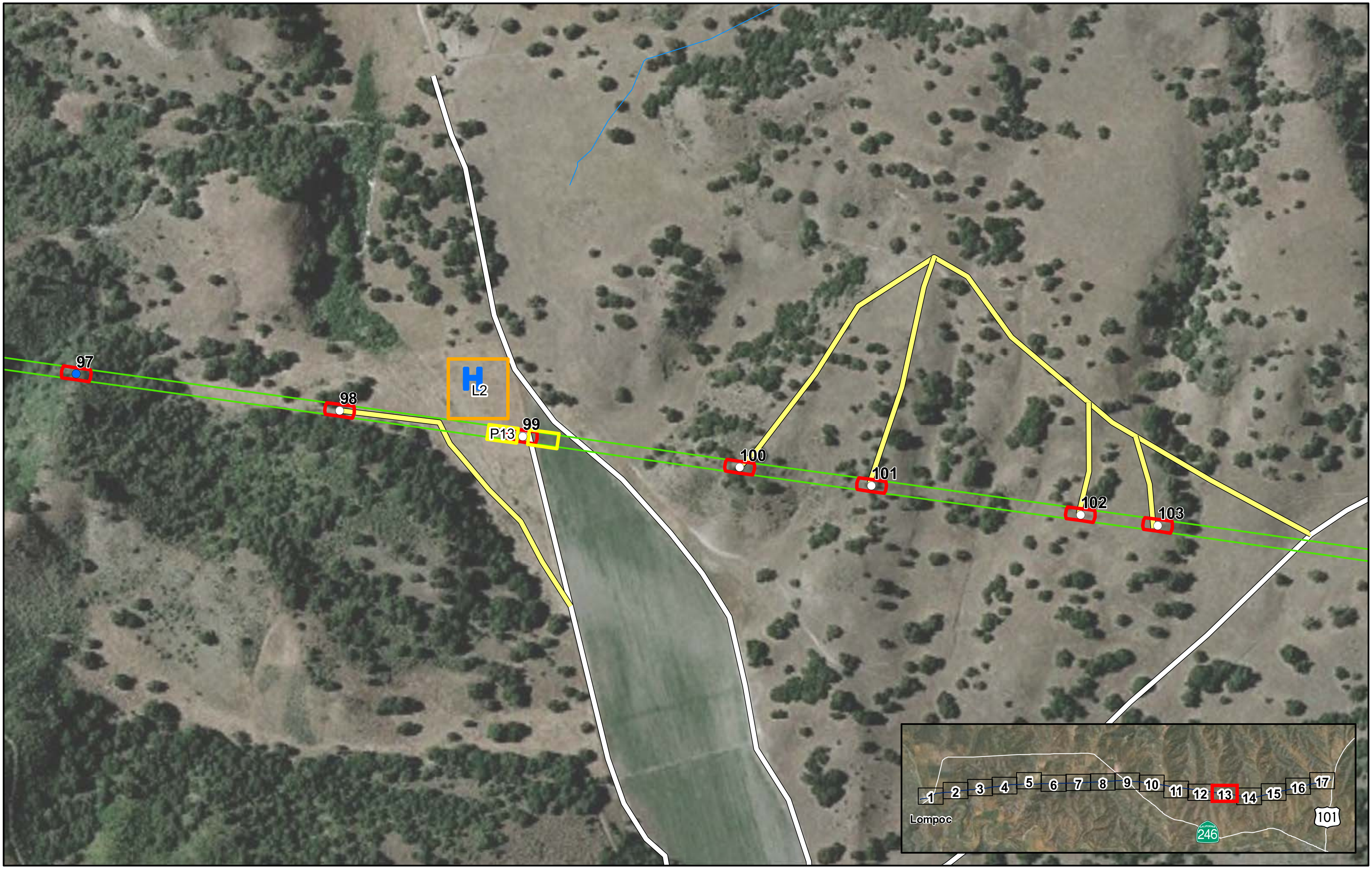
FIGURE 2.6-1 Map 12
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200



Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

PG&E

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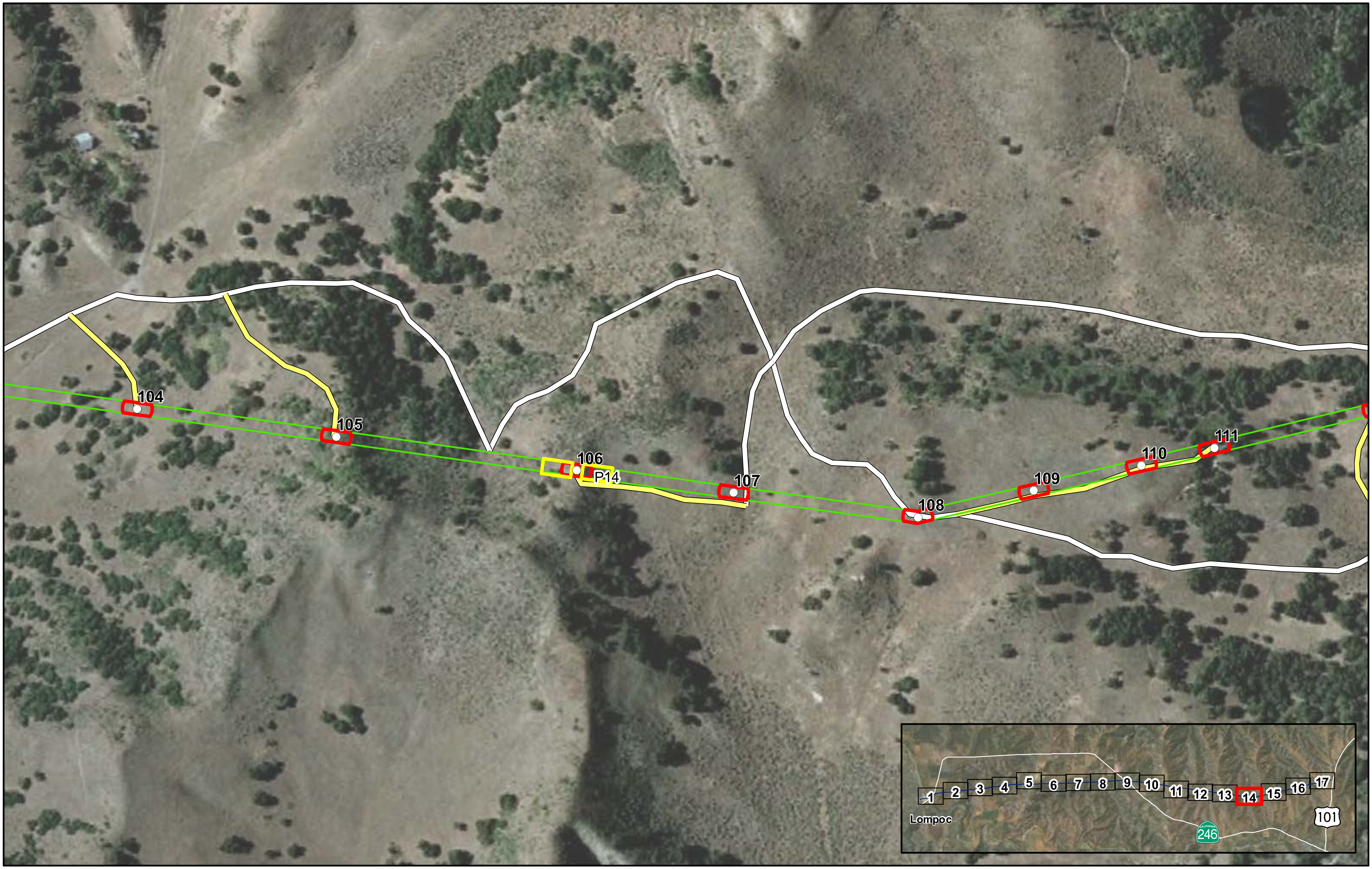
FIGURE 2.6-1 Map 13
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200



Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')

Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')

Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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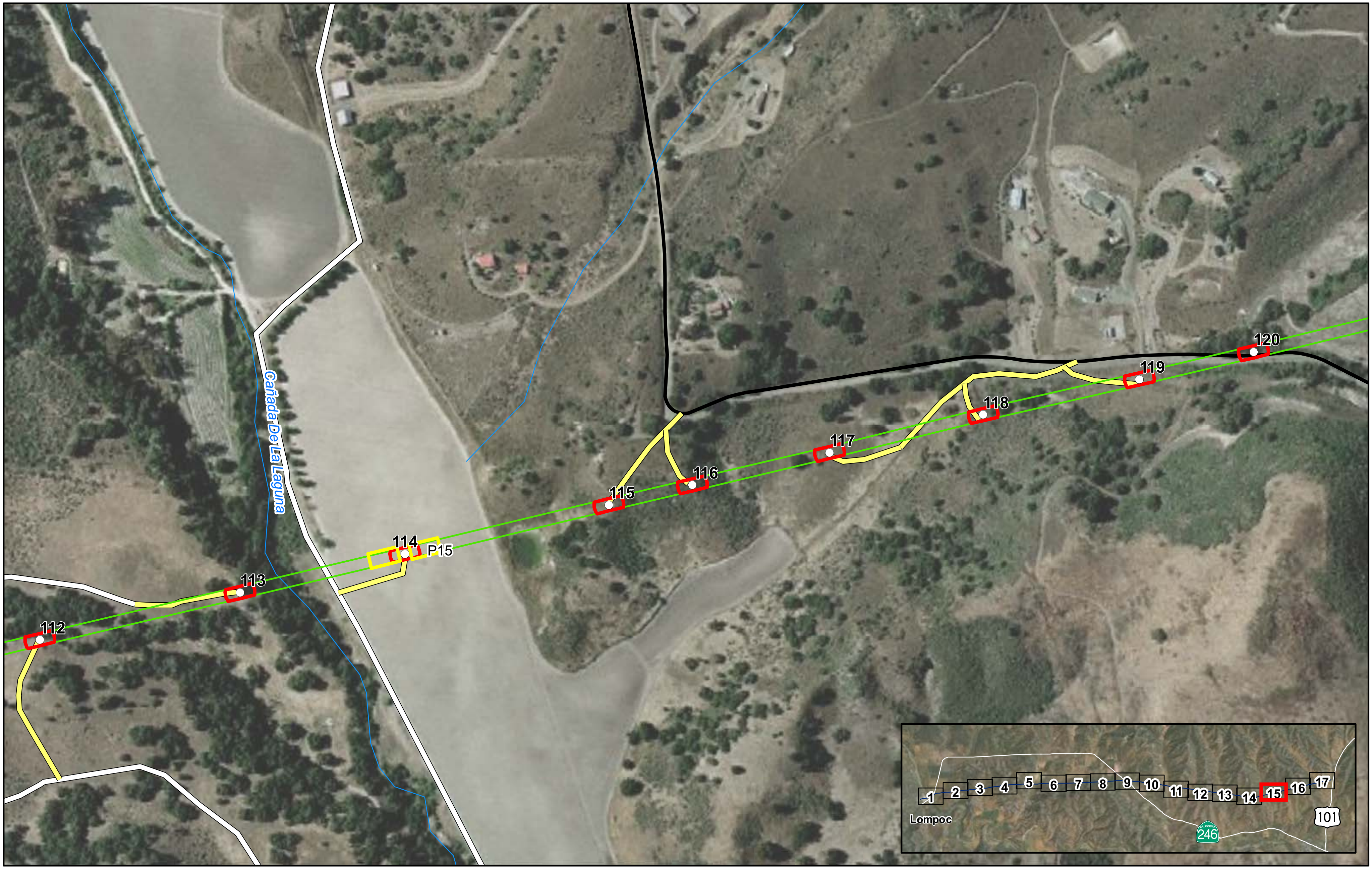
FIGURE 2.6-1 Map 14
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200



Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 15
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

- Power Poles to be Replaced
- Power Poles Replaced by Helicopter
- Existing Power Poles
- Power Pole Sites with Expected Tree Management
- Power Line ROW (40')
- Laydown Area for Helicopter
- Potential Lay Down Area
- Potential Pull and Tension Site
- Potential Staging Area
- Power Pole Work Areas (40'x100')
- Rivers/Creeks
- County Roads
- Existing Access Road
- Existing Access Road Reestablished Through Grading and Vegetation Removal
- Overland Access Route

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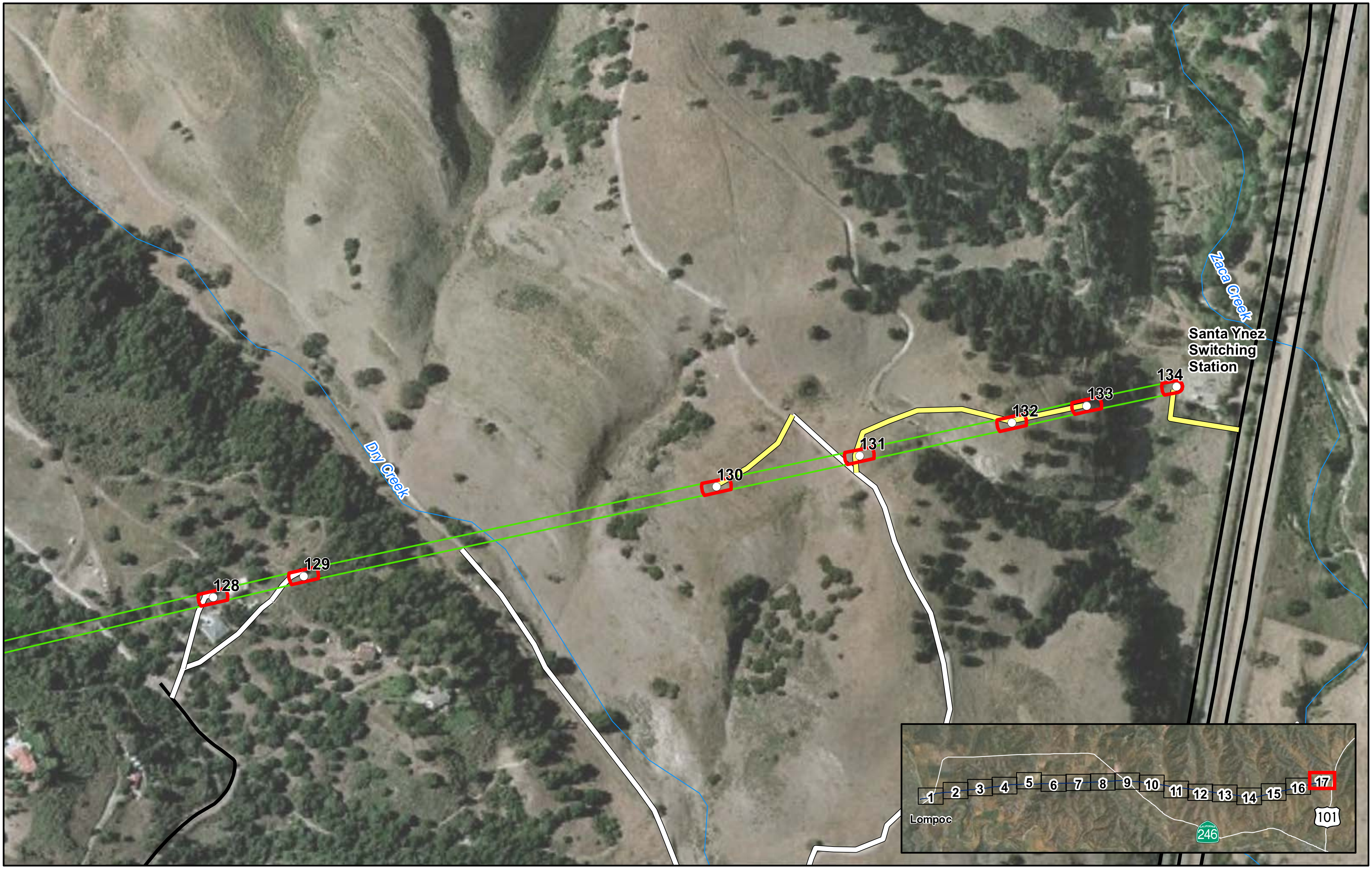
FIGURE 2.6-1 Map 16
Project Components and Construction Elements
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200



Power Poles to be Replaced
Power Poles Replaced by Helicopter
Existing Power Poles
Power Pole Sites with Expected Tree Management
Power Line ROW (40')
Laydown Area for Helicopter
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')
Rivers/Creeks
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route

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FIGURE 2.6-1 Map 17
Project Components and Construction Elements
Cabrillo - Santa Ynez 115kV Reconductoring Project

0 300 600 Feet
N
Scale: 1:5,200

2.7 Project Components

2.7.1 Power Line

The existing line is a 115 kV, single-circuit, 14.6-mile-long power line. The proposed reconductoring on approximately 14.1 miles of this line will not change the capacity or the length of the line.

The existing wood poles with 4/0 ACC conductor will be replaced one-for-one with light-duty steel poles.

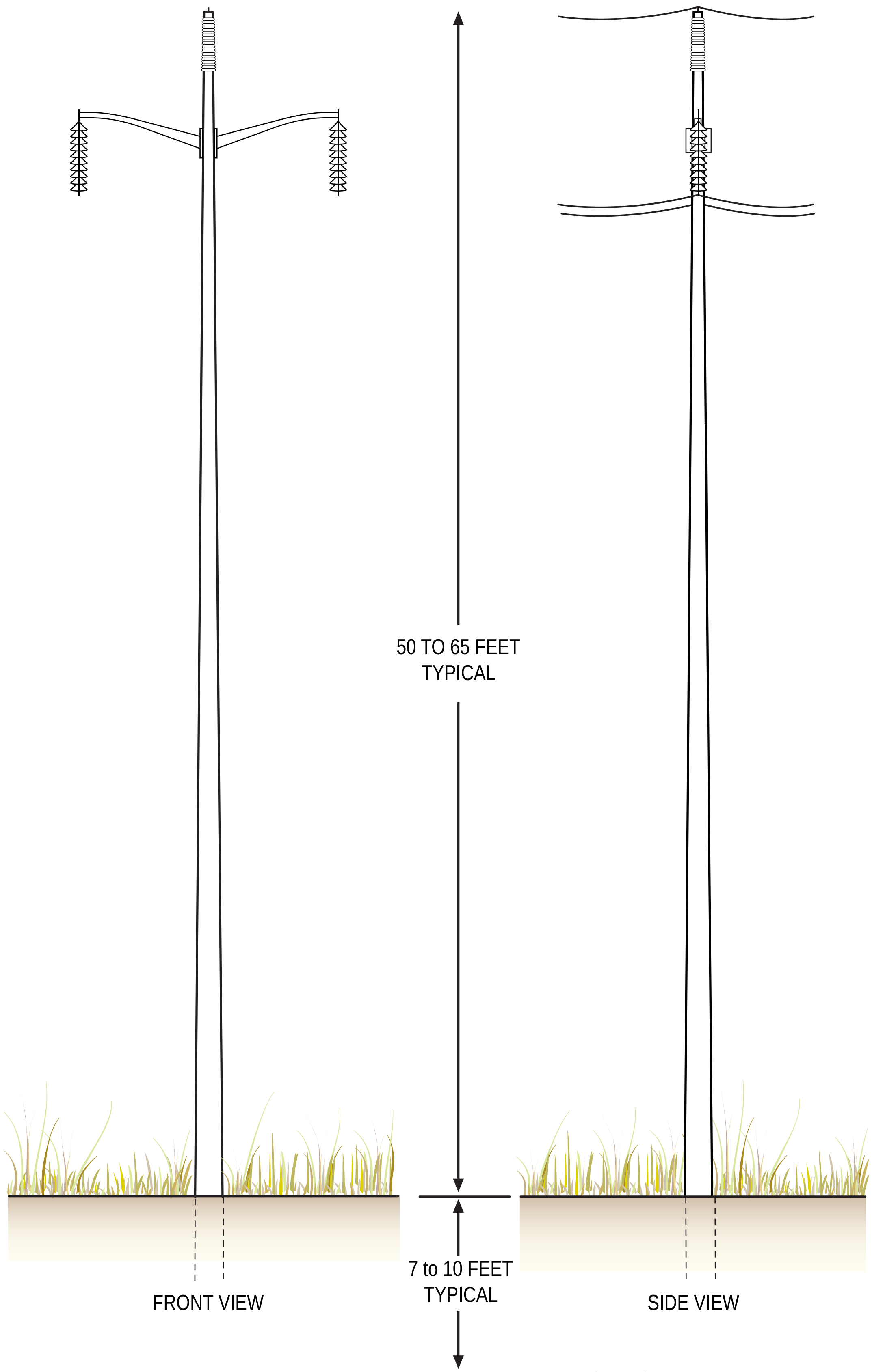
Other lines, equipment, and utilities such as communications lines that are collocated on the existing poles will be transferred to the new poles.

2.7.2 Poles

New poles typically will be located within the existing alignment approximately within 5 feet from the current location. Pole 70 will be moved approximately 35 feet upslope of the wetland area northeast of the SR 246 crossing to remove the pole from the wetland and the known breeding ground of the California tiger salamander (*Ambystoma californiense*) while maintaining satisfactory span length, proper ground clearance, and allowing better year-round access to the pole for operations and maintenance activities. The SR 246 ROW prevents Pole 69 from being moved upslope of the wetland area. Table 2.7-1 summarizes the proposed action for each pole and the means of access to each pole.

TABLE 2.7-1
Existing Poles and New Poles
Cabrillo - Santa Ynez 115 kV Reconductoring Project

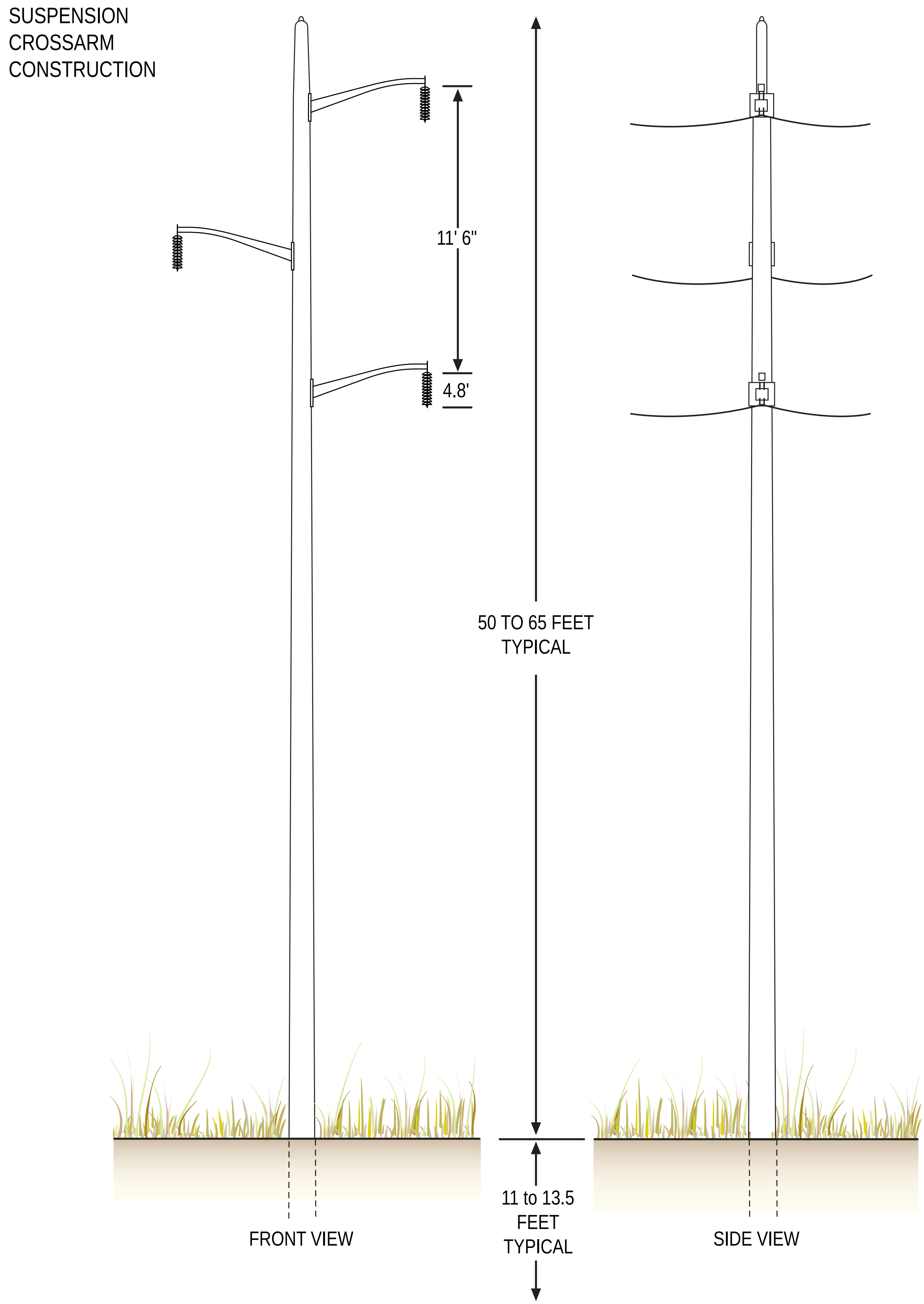
Pole Number	Project Action	New Pole Location	Access
1 – 6	No reconductoring or pole replacement (new insulators will be installed)	n/a	Line truck or by foot
7 – 69	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Line truck
70	Reconductoring and pole replacement	Approximately 35 feet east of existing pole	Line truck
71 – 81	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Line truck
82	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Helicopter
83 – 94	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Line truck
95 – 97	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Helicopter
98 – 134	Reconductoring and pole replacement	Typically within approximately 5 feet from existing pole	Line truck



Not to Scale

FIGURE 2.7-1
Typical Wood Pole
Cabrillo-Santa Ynez 115kv Reconducting

ES032009011BAO_TypWoodPole.ai_070609_lho



Not to Scale

FIGURE 2.7-2
Typical Light-duty Steel Pole
Cabrillo-Santa Ynez 115kv Reconducting

ES032009011BAO_TypLightDutySteel.ai_062409_lho

The existing poles are wood poles, as shown in Figure 2.7-1. Each new pole installed will be a light-duty steel pole, as shown in Figure 2.7-2. The new poles are direct-buried and do not have foundations. The light-duty steel poles have a surface treatment designed to render the appearance of natural weathering.

Tangent poles will be used when the run of poles continues in a straight line. Dead-end poles, which are stronger, will be used at the end of each reel of conductor (approximately 4,500 feet) or at angle changes or high strain locations, as shown in Figure 2.7-3.

PG&E will use existing standard raptor-safe design for its poles, providing 8.5 feet distance between conductors with an occasional 12 kV underbuild. In areas of underbuild, triangular raptor perch deterrents will be installed per the guidelines, as shown in Figure 2.7-4.

The new pole heights meet the requirements to accommodate the new conductor sway and suspension style. The light-duty steel poles consist of two sections. The bottom section is approximately 20 feet in total height. The existing poles are 60 to 75 feet in height and are buried approximately 7 to 10 feet into the ground, with a typical height of 50 to 65 feet above ground. The new light-duty steel poles will be buried approximate 11 to 13.5 feet in the ground and will be approximately 49 to 64 feet above ground.

2.7.3 Conductor Replacement

The power line segment being reconductored is a 115 kV single-circuit line with some existing underbuild 12 kV distribution; the replacement line will include the underbuild transferred to the new poles.

The existing bare aluminum conductor (three conductors at 4/0 AAC, seven-strand; 0.52-inch-diameter) will be replaced with three new 715 aluminum non-specular type conductor (715 MCM AAC, 0.97-inch-diameter) to address coastal climate deterioration issues and to provide enhanced voltage support, as shown in Figure 2.7-2.

To optimize operations and maintenance activities, insulators along the entire 14.6 mile line between Cabrillo Substation and Santa Ynez Switching Station will be replaced during construction, thereby creating a consistent age. Workers will climb the poles and replace the insulators or access the insulators from a line truck bucket.

The approximate distance from the ground to the lowest conductor will follow the General Order 95 requirements: thoroughfares traversed by vehicles, 30 feet minimum; water crossing less than 20 acres, 27 feet minimum; and highway crossings (e.g., SR 246), 30 feet minimum. As stated above, there will be 8.5 feet distance between conductors.

Distances between poles (spans) are anticipated to vary between 350 and 780 feet.

Existing communication lines that are collocated with the existing conductor will be moved to the new poles.

2.7.4 Substations

No work will be performed on Cabrillo Substation or Santa Ynez Switching Station as part of this Project. A portion of the Cabrillo Substation yard will be used as a temporary work area, as discussed in Section 2.9.1, Staging Areas.

FIGURE 2.7-3
Typical Dead-End Structure
Cabrillo-Santa Ynez 115kv Reconducting

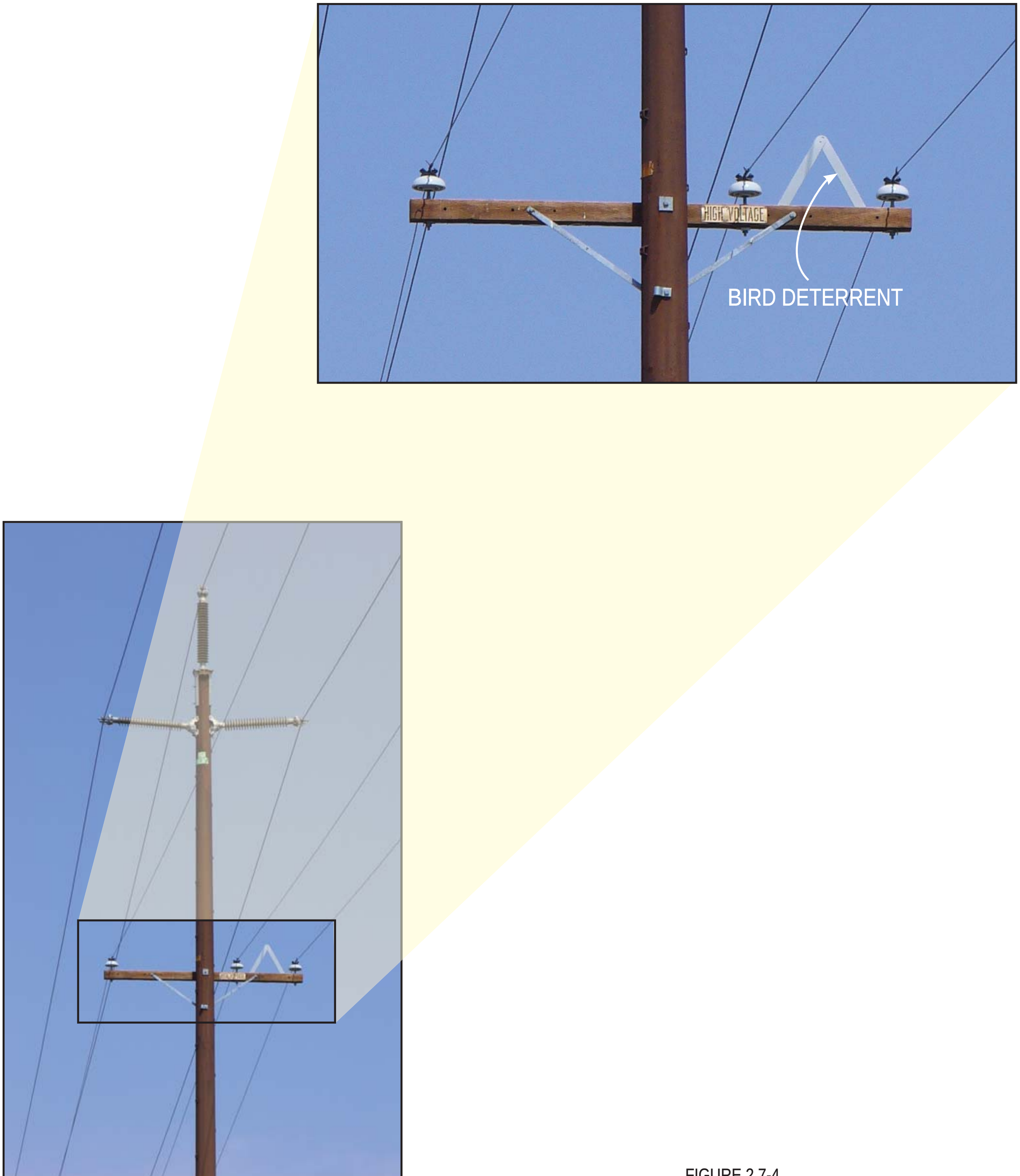


FIGURE 2.7-4
Bird Deterrent Example
Cabrillo-Santa Ynez 115kv Reconducting

2.8 Right-of-Way (ROW) Requirements

The Cabrillo - Santa Ynez 115 kV Power Line ROW begins at Cabrillo Substation in Lompoc, located in the northwest (NW) one-quarter of projected Section 35, Township 7 North, Range 34 West, San Bernardino Base and Meridian (S.B.B & M). After a northerly street crossing to Pole 1, the line runs in an easterly direction for approximately 14.6 miles to PG&E's Santa Ynez Switching Station in Buellton, located in the NW one-third of projected Section 31, Township 7 North, Range 32 West, S.B.B. & M. in Santa Barbara County. The existing 115 kV power line is located primarily in an existing easement owned by PG&E that is 40 feet wide. Two small sections of the line are located in franchise, one in a City of Lompoc street, and one crossing a state highway by encroachment permit. There have been no apparent relocations of this line. Since the initial construction of the 115 kV power line, a few consents and permits were given by PG&E to adjoining landowners to use portions of PG&E's easement for storage and other purposes. The existing alignment will be used throughout the Project.

2.9 Construction

2.9.1 Staging Areas

The staging areas will be located at Cabrillo Substation (12th and Industrial Street in Lompoc, California 93436) and the Buellton Service Center yard (55 Easy Street, Buellton, California 93427). Each staging area will be approximately 200 by 200 feet within the existing PG&E yard. The secure staging areas will be used for material and equipment storage, a reporting location for workers, and worker and Project vehicle parking.

No site preparation will be required for the staging areas. The staging areas have existing power and are currently paved or have a gravel base with secure perimeter fencing. There will be no grading or slope stabilization activities in the staging areas. Cabrillo Substation is surrounded by an 8-foot brick wall with privacy-screened, and chain-link access gates. Buellton Service Center is surrounded by an 8-foot chain-link fence with three strands of barbed wire at the top. Gates to the yard are chain link, and access gates and the yards are monitored by electronic surveillance.

Two laydown areas are indentified for potential use along the power line route, as shown on Maps 7 and 13 in Figure 2.6-1. These areas need no grading or vegetation clearing. They are relatively flat, accessible by existing access roads or overland route. The staging area on Map 13 will be used by the helicopter to access Poles 82, 95, 96, and 97. The helicopter will pick up new poles and deliver old poles to this location. The helicopter will be refueled and kept overnight at the Santa Ynez Airport (if needed), which is approximately 7 miles southeast from Santa Ynez Switching Station.

2.9.2 Work Areas

Pole assembly and installation is expected to occur in approximately 40- by 100-foot work areas around each existing pole and within the existing easement. Each new pole will be delivered and staged next to the pole that it will be replacing. Poles will be delivered and assembled using line trucks. At the four pole sites not accessible by ground equipment, new poles will be delivered to the staging area (as discussed in Section 2.9.1) and will be installed by helicopter and ground crews.

Construction vehicles are anticipated to access work areas on existing access roads, except at four poles sites where steep terrain exists and the existing access roads would require extensive grading and vegetation removal to reestablish. Instead, these four sites will be accessed by walking to the Project site from the nearest access road or along the easement.

Minimal vegetation trimming or clearing will be needed at most work areas to access the poles. Tree trimming is expected near Poles 51, 57, 58 and 61. A Leland Cypress near Pole 124, landscaped by a landowner within the ROW, will be removed to allow access to the pole. No grading or slope stabilization activities in the work areas are anticipated. No restoration activities in the work areas will be needed; vegetation trimming and clearing is routine and provides operations and maintenance access.

2.9.3 Access Roads and/or Spur Roads

Access roads expected to be used for the Project are existing roads currently used for operations and maintenance. Access roads are either paved, gravel, or dirt. No new roads are anticipated. Portions of some existing access roads will need to be reestablished through tree trimming, vegetation clearing, and some minor grading, as shown in blue on existing access roads on Maps 2, 7 and 8 in Figure 2.6-1. Shrub vegetation will be mowed and shredded or removed from access roads using an ASV mower or similar equipment on rubber tracks to clear access roads for subsequent grading. Vegetation trimming and clearing will be performed by a two-person crew using a truck with a trailer. Vegetation will be trimmed with a chainsaw or smaller manual clippers.

Road sections will be graded with a motor grader brought to an access point on a trailer hauled by a semi-truck. The grading is expected to be performed along with vegetation trimming and clearing activities. One crew of three to four people will perform both grading and vegetation activities over a period of two months. In addition to the grader, the crew will use up to two pick-up trucks to access the roads and to conduct the grading and vegetation work. Access roads are anticipated to be reestablished during the dry season in mid-2010. Overland access from existing access roads or along the ROW is anticipated in some areas, shown as yellow overland routes in Figure 2.6-1. Overland routes were selected because no grading, vegetation clearing, or trimming is expected across the grassy areas. These overland routes are currently used for existing access for operations and maintenance. Any temporary disturbance to the route area will be minimal and short term. Work at individual poles is expected to be no more than one or two days, as discussed in Section 2.9.8.

TABLE 2.9-1
Access Roads Area
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Type of Road[a]	Description	Distance
Existing Dirt Road	Typically double-track existing access roads, previously graded. No other preparation required, although a few sections may need to be re-graded, to have vegetation cleared, or to have trees trimmed.	37.38 miles
Overland Access	No preparation required. Typically grassy areas that are relatively flat currently are used for existing operations and maintenance. No restoration will be necessary.	4.14 miles

[a] Based on typical road width of 12 feet.

2.9.4 Helicopter Access

It is proposed that poles be removed and installed by helicopter at Poles 82, 95, 96, and 97. These poles would be located for assembly at the staging area near the Pole 99 staging area. Maps 10, 12 and 13 on Figure 2.6-1 indicate the helicopter pole sites and helicopter staging area.

From the helicopter laydown area (Map 13 on Figure 2.6-1), the helicopter will transport pole materials to and from the four pole sites along the ROW. The helicopter type will be a Bell 205 (load capacity 3,100 pounds), Bell 212 (load capacity 3,000 pounds), or a Bell 214 (load capacity 6,000 pounds), depending upon availability at the time of construction. The helicopter is expected to be used for one day between 7:00 a.m. and 4:00 p.m. to complete the pole installations and removal at the four sites.

A Lift Plan will be prepared and approved by the Federal Aviation Administration prior to all construction helicopter operations. PG&E does not anticipate that residents will be required to temporarily vacate their homes. In the unlikely event that final construction plans and the Lift Plan require otherwise, PG&E will coordinate with potentially affected residents (providing a minimum of 30 days notice) to minimize the duration of the necessary work and any resultant inconvenience.

Any need for highway or roadway closures or rolling stops will be identified in the Lift Plan and will be coordinated with the appropriate jurisdictions, as described in Section 4.11, Transportation and Traffic. APMs to avoid and minimize potential impacts from helicopter use are listed in Section 3.0, Applicant Proposed Measures, and in the Noise (3.9) and Traffic and Transportation (3.11) sections.

2.9.5 Vegetation Clearance

Vegetation along portions of some existing access roads will need to be trimmed or cleared to reestablish the access roads and allow equipment use. Along some access roads, trees will also be trimmed to provide clearance for vehicles; however, no trees will be removed during the vegetation clearing along roads. Removal of one landscape tree (Leland Cypress) is anticipated at a Pole 124 to allow the line truck access to the pole site work area in the ROW. Tree trimming is expected near Poles 51, 57, 58, and 61.

Chainsaws and manual clippers will be used to trim and cut vegetation. Shrub vegetation growing on access roads will be cleared by an ASV mower or similar equipment on rubber tracks. This equipment will mulch the brush, and the mulch will be spread on the road to be driven over.

Figure 2.6-1 identifies the expected areas needing vegetation clearing (blue roads) and tree trimming (green poles). The vegetation work is expected to be performed over two months in conjunction with road grading activities.

2.9.6 Erosion and Sediment Control and Pollution Prevention during Construction

Approximately 0.68 mile of the existing access roads will need grading to reestablish access, as discussed in Section 2.9.3. APMs to minimize and avoid erosion, sediment control and pollution during construction are listed in Section 3.0 and are discussed in their respective resource sections. Please see Sections 3.6 and 3.7 for APMs addressing Erosion and Sedimentation and/or Hazardous Waste and Spill Prevention Plans.

The light-duty steel pole base diameter is approximately the same as the average wood pole base diameter (wood pole base diameters vary given the nature of the material); therefore, a less than significant difference is expected for any variation between existing and permanent footprints.

Construction debris will be taken on a line truck with a trailer to the Santa Maria Service Center as needed for recycling or disposal. Wood poles and any sawdust from cutting the poles will be taken to the designated Santa Maria Service Center collection bin for transport with other bin content to a licensed Class 1 or a composite-lined portion of a solid waste landfill.

2.9.7 Cleanup and Post-construction Restoration

All construction debris will be picked up and hauled away for recycling or disposal during construction. PG&E will conduct a final survey to ensure that clean-up activities have been successfully completed as required.

Existing access roads will not be re-vegetated; they will continue to be used for operations and maintenance. Vegetation clearing and grading are not anticipated for any staging areas, pull and tension sites, or pole site work areas; therefore, no restoration is expected.

2.9.8 Power Line Construction

2.9.8.1 Pull and Tension Sites

According to the preliminary plan, there will be approximately 34 pull and tension sites. The sites are located within the easements and are shown in Figure 2.6-1. A diagram of typical conductor stringing is provided in Figure 2.9-1. The average distance is 4,000 feet between pull and tension sites. The area of each pull or tension site is approximately 40 feet wide by 100 feet long centered in the width of the easement.

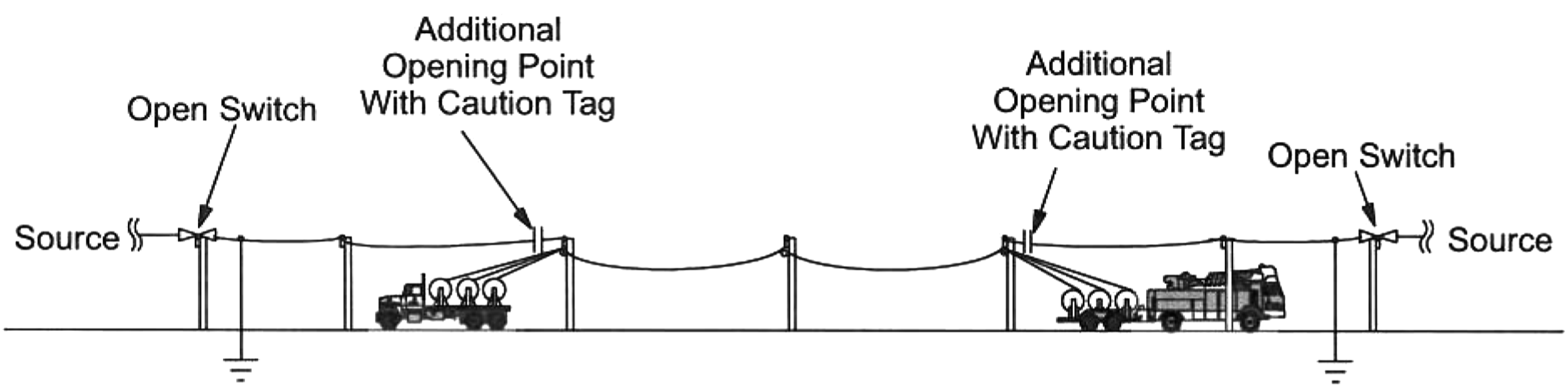


FIGURE 2.9-1
Typical Conductor Stringing Diagram
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Transport vehicles (crew-cab truck and/or half-ton pickup) will be used to transport personnel to a pull or tension site. To haul the conductor to the site, reel trailers with reel stands will be mounted on a line truck. On the line truck, pullers will be mounted to install the conductor. The conductor will be removed from the sites on a line truck.

2.9.8.2 Top Removal

If needed, a line truck will be used to access and remove pole tops. The pole will be secured by the line truck, and a chainsaw will be used to remove the top portion of the pole. The sawdust from the chainsaw activities will be collected, removed from the site, and disposed of with the pole top.

2.9.8.3 Pole Installation and Removal

Pole installation and removal consists of seven basic steps:

1. Deliver new pole at pole site.
2. Auger new hole using line truck attachment or hand dig if the line truck can not access the site.
3. Install bottom section by line truck or helicopter (at four sites).
4. Install top section by line truck or helicopter (at four sites).
5. Move old conductors to the new poles by the line truck or by hand with ropes.
6. Pull new conductor while old conductor is removed.
7. Remove old poles by line truck or helicopter (at four sites) and fill hole.

A line truck with trailer and a potential second truck (crew-cab truck and/or half-ton pickup) will be used to access the majority of the poles sites for pole installation and removal. A maximum of four or five truck trips are anticipated to each pole site. The truck trips to the site are to deliver the pole, auger hole, set the new bottom section, set the new top section, and remove the old pole. Each pole site is expected to be accessed one or two days during construction. Pole sections will be delivered in matched pairs to each new pole site. A line truck and trailer can transport between two and three poles. When delivering and removing poles, the line truck will be expected to access two or three sites per trip per day as schedule and as conditions permit. Additionally, pole delivery and augering and setting the bottom pole may occur in one day during a single trip.

New poles will be placed in holes made with a line truck auger attachment (highway digger with 15- to 18-foot depth capacity); no separate foundations will be used. New poles are expected to be located typically within approximately 5 feet from existing poles and in-line with the existing power line alignment. The new pole holes will typically be 5 to 6 feet deeper then the existing pole holes. A water truck may be used during augering to keep the soil firm in areas of sandy soil. Long-handled shovels will be carried to the four sites not accessible by the line truck and will be used to dig the new pole holes. Augered pole holes will be covered with the end piece of a conductor spool until the new pole is installed.

To assemble the light-duty steel poles, a line truck with a boom attachment will be positioned at the pole site to land the top section on the bottom section. A truck with a worker-lift attachment will be position to allow a worker to guide the top section into place and to secure the two sections.

Top sections will be installed when a line clearance can be scheduled. Clearances will only be issued day-to-day during daylight hours and will never be issued overnight during the summer or during peak load conditions. Setting the pole top sections may be performed on separate days to accommodate line clearance schedules and environmental seasonal work restrictions. If installed at separate times, the top section would remain at the pole site until assembled to the bottom section.

The existing poles do not have foundations. A hydraulic jack mounted on the line truck will be used to loosen old poles as needed. Poles are expected to be cut into two sections for removal on the line truck with trailer or by helicopter (at four sites). When old poles are removed, the soil removed while augering the new pole hole will be used to backfill the old pole hole; any unused soil will be feathered in around the new pole site.

At the four pole sites inaccessible by the line truck, workers will arrive on foot from the nearest access road, and pole installation and removal will be completed by helicopter. Wood pole sections will be removed individually per helicopter trip. There are three uses of the helicopter expected at the four pole sites:

- Deliver new pole to pole site.
- Set pole.
- Remove old pole top and bottom sections from pole site (two trips).

The wood pole will be cut into two sections for removal. Pole removal of the top and bottom section from the site will most likely occur on the same day. Transportation activity (crews and equipment) is summarized in Table 2.9-1.

As discussed in Section 2.9.3, wood poles and any sawdust from cutting poles will be taken to the designated Santa Maria Service Center collection bin by line truck with a trailer for transport with other bin contents to a licensed Class 1 or a composite-lined portion of a solid waste landfill. Table 2.9-2 provides information about poles installation and associated disturbance area estimates.

TABLE 2.9-2
Summary of Approximate Pole Metrics
Cabrillo - Santa Ynez 115 kV Reconductoring Project

	Approximate Metrics	
Pole Feature	**Existing**	**Proposed**
Pole Diameter	18.5 inches (average, wood size varies)	18.5 inches (average, pole height dependant)
Auger Hole Depth	7 to 10 feet	11 to 13.5 feet
Permanent Footprint per Pole	1.9 square feet (average)	1.9 square feet
Number of Poles to be Replaced	128	128
Average Work Area at each Pole Site	4,000 square feet	4,000 square feet (same location as existing pole site)
Total Permanent Footprint for Poles	Approximately .0056 acres	Approximately .0056 acres

2.9.9 Conductor Replacement

Conductor replacement will occur in sections when seasonal restrictions and crew scheduling permit. Some installation phases may occur concurrently on separate lines sections. Each conductor reel contains 4,500 feet of conductor. Equipment will be staged at the pull and tension sites (approximately 4,000 feet between sites) for each section.

During conductor installation, the existing power line and any distribution lines that cross or are collocated on the line will be taken out of service (known as taking a clearance). Before conductor installation begins, any road crossings and other locations within the section of installation will be briefly closed or a rolling stop will be arranged. Any road closures that must occur on private and county roads are not expected to exceed 5 minutes in duration. For SR 246 crossings, the California Highway Patrol and Caltrans will be contacted to organize 5-minute rolling stops. Any necessary permits will be obtained from the affected agencies.

The existing conductors will be moved from the old poles to the new poles during the line clearance using the boom on the line truck and a line truck with a worker lift. At sites inaccessible by the line truck, the lines will be moved by hand using ropes and lines to transfer the conductors between poles.

The conductor stringing operation begins with installation of rollers. The rollers attach to the lower end of the pole insulators. The rollers allow the individual conductors to be pulled through each structure until the conductors are ready to be pulled up to the final tension position.

A cable will be attached between the old conductor and new conductor on a reel attached to a line truck at a pull and tension site. From an adjacent pull and tension site, a line truck with a drum puller and an empty conductor reel will pull the old conductor onto the reel for salvage while pulling the new conductor in place. Tension will be maintained by the line truck with the new conductor reel to prevent the line from sagging to the ground.

After the conductors are pulled into place, wire or conductor sags will be adjusted to a pre-calculated level. The conductors will then be clamped to the end of each insulator as the sheaves are removed. The final step of the conductor installation will be to install vibration dampers and other accessories. Any temporarily closed road will be opened at this time.

Packing crates, spare bolts, and construction debris will be picked up and hauled away for recycling or disposal during construction. PG&E will conduct a final survey to ensure that cleanup activities have been successfully completed as required.

2.9.10 Construction Workforce and Equipment

Each construction crew is expected to have between two and five workers. Two crews from the Santa Maria Service Yard will be working on most days. During the construction period, there will be two to five crews of approximately five people each, depending on specific activities being conducted. At peak of construction, there may be as many as 10 crews during day clearances to install the conductor and to minimize the length and number of line clearances. Crews typically work four, 10-hour days per week. During conductor installation and peaks in construction, PG&E General Construction crews from outside of the Santa Maria area may be brought to the Project site from other PG&E Los Padres work areas (Templeton, San Luis Obispo, Pismo Beach, Buellton, or outside of the immediate PG&E Division area if needed).

Table 2.9-3 lists the expected equipment and personnel by construction activity. Not all equipment and personnel may be used during all portions of the activity.

TABLE 2.9-3
Power Line Construction Anticipated Personnel and Equipment
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Activity	People	Quantity of Equipment	
Survey	2 to 3	1	pickup truck
Access Road Reestablishment	2 to 3	1	ASV mower or similar equipment or rubber tracks
		1	motor grader
		1	pickup truck
		1	semi truck with trailer to haul grader
		1	water truck
Auger Holes	3	1	water truck
		1	pickup truck
		1	line truck with auger attachment
Material Haul	3	1	line truck with trailer
Pole Delivery	3	1	pickup truck
		1	line truck with trailer
Pole Installation – Aerial Access (includes old pole removal)	4	1	crew-cab truck – transport to walk-in access point
		1	helicopter
Pole Installation - Ground access, per crew, two crews required (includes old pole removal)	4	1	crew-cab truck
		1	line truck with worker-lift attachment
		1	line truck with trailer
Conductor Installation (includes old conductor removal)	8	1	wire reel attached to line truck or trailer
		3	pickup trucks
		2	worker lift attached to line truck
		1	puller attached to line truck
		1	tensioner attached to line truck

Table 2.9-4 describes the anticipated use of the equipment described in text and listed in Table 2.9-3.

TABLE 2.9-4
Equipment Expected to be Used During Construction
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Equipment	Use
Auger (truck mounted highway digger 15- to 18-foot depth capability)	Install pole holes
ASV mower or similar equipment on rubber tracks	Reestablish access road or pole site
Crew-cab truck, pickup truck	Transport personnel
Derrick boom (truck mounted)	Install and remove poles, move conductors
Line truck (with auger, puller, worker-lift, etc.)	Install holes, poles, conductor
Helicopter	Install and remove four poles
Mechanics service trucks	Service vehicles
Motor grader	Reestablish access road
Reel trailers with reel stands (semi-trailer or truck mounted type)	Haul conductor
Puller (line truck-mounted)	Install conductor, remove old conductor
Semi truck	Haul motor grader
Tensioner (line truck-mounted)	Install conductor
Water truck	Support auger in sandy soils
Worker-lift (truck mounted)	Lift workers to perform work on structures

2.9.11 Construction Schedule

The target construction start date is April 2010. The estimated Project completion date is June 2011. Generally speaking, the Cabrillo - Santa Ynez 115 kV Power Line cannot be removed from service during the summer season. Pole installation, line reconductoring and pole removal are expected to be performed over a 15-month period from April 2010 through June 2011, with the majority of activities occurring outside the summer months of June, July and August 2010. Reconductoring can begin along sections of the line when new poles have been installed for approximately 1 mile (length of new conductor reel).

Line clearances (when lines are taken out of service) are not generally available June 15 through October 1 of each year; therefore, reconductoring is expected to occur primarily between October 2010 and June 2011. Reconductoring and section pole installation can be performed in the dry season to minimize impacts to sensitive areas. For example, placing new poles in the wetlands area northeast of SR 246 could be done during the summer to avoid working in sensitive habitat during the wet season. The construction plan will support staggered pole delivery and installation to minimize impacts in sensitive areas. The proposed schedule is presented in Table 2.9-5.

TABLE 2.9-5
Proposed Construction Schedule
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Project Activity	Proposed Schedule
Final engineering completed	October 2009
Begin acquiring temporary construction easements	December 2009
Permit To Construct decision adopted and effective	March 2010
Acquisition of required permits	March 2010
Right-of-way / property acquisition	Not anticipated; If needed, March 2010
Construction begins: access road re-establishment, and pole installation begins	April 2010
Pole installation, reconductoring (as pole installation and line clearances permit) and pole removal	May 2010 through June 2011, as schedule constraints allow
Project operational	June 2011
Cleanup	July 2011

2.10 Operation and Maintenance

No changes to existing operation and maintenance activities are anticipated. Reconductoring of the line will improve reliability, thereby resulting in less wire breakage from corrosion and brittleness. Less breakage is anticipated to result in fewer events or incidents that require emergency responses and inspections.

All power lines and assets that fall under the voltages of 70 kV through 500 kV in the Los Padres area are subjected to the guidelines of PG&E's Standard S1001, Electric Transmission Line Inspection and Preventative Maintenance Program. Standard S1001 is supplemented by the Electric Transmission Preventative Maintenance Manual.

As required by Standard S1001, the existing power line is inspected yearly, or as needed when driven by an event or incident, such as an emergency. Additionally, a detailed ground inspection is required every other year, with a subsequent aerial patrol in between those years. The routine annual inspection, detailed ground inspection, and aerial patrol are not expected to change with the proposed Project. Equipment and methods typically used (off-road utility vehicles [e.g., 6x6 Polaris/Razor utility quad, line truck, and bucket truck] and walking to poles inaccessible by vehicle) are not anticipated to change. Any existing access roads reestablished during the Project will be used.

As maintenance needs arise, repairs and preventative maintenance will be fulfilled by the PG&E power line crew (five trained employees).

3.0 Applicant Proposed Measures

This section presents APMs that have been incorporated into the proposed Project's design and construction plans to minimize the proposed Project's potential impacts during the construction and operational phases. APMs are presented within each resource discipline segment assessment. APMs are proposed by PG&E as a part of Project design.

3.1 Aesthetics

APM Aesthetics (AE)-1: New source of substantial light or glare avoidance. PG&E will replace the existing conductor with a non-specular conductor for the specific purpose of minimizing the reflectivity of any new Project facilities.

3.2 Agricultural, Land Use, and Recreational Resources

APM Land Use (LU)-1: Agriculture impacts avoidance. To avoid potential impacts to agriculture, PG&E will work with farmers and ranchers to conduct its work between their harvest and planting periods where and whenever possible. In areas containing permanent crops (i.e., grape vines, tree orchard, etc.) that must be removed and replaced to gain access to poles sites for construction purposes, PG&E will provide compensation to landowners for crop loss and other reasonable and associated costs as soon as practicable after completion of construction. Access across active crop areas will be negotiated with the owners in advance of any construction activities.

3.3 Air Quality

APM Air Quality (AQ)-1: Fugitive dust minimization. The following fugitive dust control measures will be implemented during construction. According to the SBCAPCD, implementation of these measures minimizes fugitive dust emissions to a level of insignificance. Notes in brackets are clarifications to the SBCAPCD measures as they would apply to this linear project:

- During construction, PG&E will use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Watering frequency will increase whenever the wind speed exceeds 15 mph. Reclaimed water will be used whenever possible. However, reclaimed water will not be used in or around crops for human consumption. [This measure is interpreted as applying to areas such as graded areas and not intended for construction sites, and is not being interpreted here as applying to light-duty access road use by PG&E vehicles accessing pole sites for one or two days, or to pull sites where vegetation is not being cleared.]

- Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.
- Gravel pads [or equivalent] must be installed at all access points to prevent tracking of mud on to public roads. [Specific measures to prevent mud tracking will be provided in the Storm Water Pollution Prevention Plan which is discussed in APM Water Quality (WQ)-1: SWPPP development and implementation.]
- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur. [The only clearing and grading anticipated is the reestablishment of existing unpaved access roads. After construction, those unpaved access roads will be returned to their normal operations and maintenance use; therefore, no additional dust control measures are needed.] PG&E shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to land use clearance for map recordation and land use clearance for finish grading for the structure. [No map recordation is needed for this Project.]
- Prior to land use clearance, the applicant shall include, as a note on a separate informational sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans. [No map recordation is needed for this Project.]

APM Greenhouse gas (GHG)-1: GHG emissions minimization. The following measures will be implemented during construction to minimize GHG emissions.

- Park-and-ride facilities in the Project vicinity will be identified and construction workers will be encouraged to carpool to the job staging area to the extent feasible. The ability to develop an effective carpool program for the Proposed Project will depend upon the proximity of carpool facilities to the staging area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the Project's construction schedule. Crew transportation to the Project site is discussed in Section 4.10, Traffic and Transportation.
- Unnecessary construction vehicle 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.

- Construction equipment will be maintained in good working order, per manufacturing specifications. Low-emission construction equipment will be used where feasible to further minimize the minimal short-term increase in GHG emissions. With implementation of APM GHG-1, the entire construction effort for this project is forecasted to create 379 metric tons of CO_2 which represents a small fraction of the emissions limit set by AB322020 (427 million metric tons CO_2e).

3.4 Biological Resources

APM Biological Resources (BO)-1: General avoidance of biological resources impacts.

- **Development and implementation of a Worker Environmental Awareness Program.** A qualified biologist will conduct an environmental awareness program for all construction and on-site personnel prior to the beginning of site work. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of the Biological Opinion and other permits. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers shall be informed about the presence, life history and habitat requirements of the California red-legged frog, California tiger salamander, western spadefoot toad, southwestern pond turtle, burrowing owl, and American badger. Training will also include information on state and federal laws protecting nesting birds, wetlands and other water resources.

  An educational brochure will be produced for construction crews working on the Project. Color photos of sensitive species will be included, as well as a discussion of the APMs and specific avoidance or minimization measures for sensitive species and habitats.

- **Biological monitor on-site during construction activities in sensitive areas.** A qualified biological monitor will be onsite during ground-disturbing construction activities near and in sensitive habitat as defined and will ensure implementation and compliance with all avoidance and mitigation measures. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel, as appropriate, if construction activities are likely to impact sensitive biological resources. The biological monitor will document monitoring activities in a daily log summarizing construction activities and environmental compliance. The daily logs will be included in the Project report submitted to the agencies following completion of construction.

- **Identification and marking of sensitive resource areas.** Sensitive resources in or adjacent to Project work areas within the alignment identified during the preconstruction surveys such as occupied habitat, active badger, burrowing owl or California tiger salamander burrows or occupied nests in the Project vicinity will be mapped and clearly marked in the field. Such areas will be avoided during construction to the extent practicable and/or additional measures (described below) will be implemented to avoid or minimize impacts.

- **Litter and trash management.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the Project area will be deposited in closed trash containers. Trash containers will be removed from the Project area at the end of each working day.
- **Parking.** Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas as identified in this document. Off-road parking shall only be permitted in previously identified and designated work areas.
- **Route and speed limitations.** Vehicles will be confined to established roadways and pre-approved access roads, overland routes and access areas. Access routes and temporary work areas will be limited to the minimum necessary to achieve the Project goals. Routes and boundaries of work areas, including access roads, will be clearly mapped prior to initiating Project construction. Vehicular speeds will be kept to 15 mph on unpaved roads.
- **Maintenance and refueling.** All equipment will be maintained such that there will be no leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down gradient aquatic habitat unless otherwise isolated from habitat. Proper spill prevention and cleanup equipment shall be maintained in all refueling areas.
- **Minimization of fire hazard.** During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads will have federal or state approved spark arrestors. All off-road vehicles will be equipped with a backpack pump filled with water and a shovel. All fuel trucks will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.
- **Pets and firearms:** No pets or firearms will be permitted at the Project site.
- **Reporting and communication.** The biological monitor will be responsible for immediately reporting any capture and relocation, or inadvertent harm, entrapment or death of a listed species to the U.S. Fish and Wildlife Service and the California Department of Fish and Game. A monitoring report will be submitted to the resource agencies 90 days after the completion of construction activities.

APM BO-2: Avoidance of impacts to natural habitats

- **Minimization of grading and vegetation removal along access roads and pole work areas.** Clearing and grading will be limited to previous access roads that have become overgrown with vegetation. Overland access routes and work areas around pole locations will not require any grading or vegetation removal other than minimal tree trimming as described in the Project description.
- **Tree removal.** A single tree, a Leland Cypress, is planned for removal as described in the Project description. No other tree removal is planned.

- **Re-vegetation.** Since clearing and grading is limited to reestablishment of existing roads, no re-vegetation is needed for the Project. Temporarily disturbed vegetation is expected to recover without the need for reseeding.

- **Weed management.** Prior to work on the Project, vehicles and construction equipment will be cleaned of excessive mud and dirt that may transport weed seed into the Project area.

APM BO-3: Avoidance of and minimization of potential impacts to special-status plants.

- **Rare plant population avoidance.** To the maximum extent possible, rare plant populations will be avoided. A qualified biologist will stake an exclusion zone at the limit of work adjacent to rare plant occurrences that have been identified to date. Within 60 days after Project activities have been completed at a given worksite, all staking and flagging will be removed.

APM BO-4: General avoidance and minimization of impacts to aquatic or wetland habitat.

- **Timing and extent of work in aquatic or wetland habitat.** Work in aquatic or wetland habitat is limited to the removal of two poles and replacement of one pole in the wetland northeast of SR 246. All ground-disturbing work at this location will take place in dry conditions. The timing is dependant on seasonal rainfall; in winter 2008-2009, ground was dry even in January.

APM BO-5: Avoidance of impacts to California red-legged frog, California tiger salamander, western spade foot toad and western pond turtle in proximity to identified suitable breeding ponds or aquatic habitat.

- **Pre-construction surveys and relocation of species.** Pre-construction surveys within two weeks of start of construction at work areas within 600 feet of suitable California tiger salamander breeding habitat with small mammal burrows will be conducted by a qualified, agency-approved biologist. Pre-construction surveys within two weeks of start of construction at work areas within 300 feet of suitable California red-legged frog aquatic habitat will be conducted by a qualified, agency-approved biologist. The biologist will remove any individuals found to a location agreed upon by the USFWS and CDFG. Potential habitat for western spade foot toad and western pond turtle exists in similar locations to the California red-legged frog and California tiger salamander and potential impacts will be minimized with the implementation of this APM. Before the start of work each morning, the biologist will check under any equipment and stored constructed supplies left in the work area overnight within 600 feet of suitable habitat. All pole holes will be backfilled or covered at the end of the work day.

- **Seasonal timing restrictions.** To the extent possible, all ground-disturbing construction activities within the critical habitat and within 600 feet of suitable breeding habitat will be limited to the period from May 1 through October 31. When ground-disturbing activities, such a pole removal, are necessary, a qualified biologist will conduct a pre-construction survey of the work area immediately preceding construction activities. All potential areas including burrows, woody debris piles, wetlands, riparian areas and edges of ponds within the work area will be thoroughly checked. Any species found will be captured and relocated to an approved location type (e.g., a small mammal burrow) within an approved area prior to the start of construction.

- **Dawn and dusk timing restrictions.** Construction activities within 600 feet of suitable aquatic habitat shall not begin prior to 30 minutes after sunrise and will cease no later than 30 minutes before sunset.
- **Minimization of burrow disturbance.** In non-ground-disturbing work areas with active burrows, plywood sheets will be used to temporarily cover burrows to minimize disturbance. When the plywood is removed, all burrow openings that were clear before the plywood was placed will be cleared.
- **Erosion control materials.** Only tightly woven netting or similar material shall be used for all geo-synthetic erosion control materials such as coir rolls and geo-textiles. No plastic monofilament matting will be used.

APM BO-6: Avoidance of and minimization of potential impacts to southwestern willow flycatcher and least Bell's vireo.

- **Avoidance of sensitive species near work areas.** Work anticipated within 300 feet of the potential nesting habitat for these species is the use of pull site P1 and insulator replacement at Poles 4, 5 and 6. Insulator replacement and use of the pull site will be restricted to the non-nesting season unless pre-construction surveys determine neither the flycatcher nor the vireo is nesting within 300 feet of the poles.

APM BO-7: Avoidance of and minimization of potential impacts to western burrowing owl.

- **Pre-construction survey.** A qualified biologist will conduct a preconstruction survey in all Project work areas that providing suitable nesting habitat (annual grasslands and pastures) for the burrowing owl habitat prior to construction. The survey will include checking for the burrowing owl and owl signs (e.g., white wash at burrow entrances). If owls are found a work area and avoidance is not feasible, a passive relocation effort (displacing the owls from the work area) may be conducted as described below, subject to the approval of the CDFG.
- **Avoidance through passive relocation.** Passive relocation of owls may occur during the non-breeding season (September 1 through January 31). Passive relocation would include installing one-way doors on the entrances of burrows. The one-way doors shall be left in for 48 hours to ensure the owls have vacated the nest site. Owls would not be relocated during the breeding season.
- **Avoidance of occupied burrows.** No work areas will be established around a known occupied burrow. No disturbance should occur within approximately 160 feet (50 meters) of occupied burrows during the non-breeding season of September 1 through January 31 or within approximately 250 feet (75 meters) during the breeding season of February 1 through August 31. The limits of the exclusion zone in the Project work area will be clearly marked with signs, flagging and/or fencing.

APM BO-8: Avoidance of and minimization of potential impacts to song birds, raptors and other migratory bird species.

- **Minimization of disturbance through pre-construction surveys and biological monitoring during construction.** Pre-construction bird nesting surveys for pull sites or locations of pole replacement or clearing and grading activities will be conducted before work performed between February 15 and August 15. In the event an active nest is identified within 50 feet (300 feet for raptors) of the Project work area, a biological monitor will monitor the activity of the nesting birds during work to determine if construction activities are resulting in significant disturbance to the birds. To the extent possible, working in the vicinity of the nest will be avoided; however, if avoidance is not practicable, a buffer zone, as determined by a qualified biologist, will be maintained around the active nest to prevent nest abandonment.
- **Minimization of electrocution hazards.** Installation of the replacement power lines will conform to PG&E's most current version of Bird and Wildlife Protection Standards, which may include the use of insulated jumper wires and bird/animal guards.

APM BO-9: Avoidance of and minimization of potential impacts to wetlands and water resources.

- **Stormwater Pollution Prevention Plan and erosion control measures.** As described in Section 4.8, APMs WQ-1 and WQ-3, a Stormwater Pollution Prevention Plan (SWPPP) will be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary for the Project. Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, as well as aquatic habitat occupied by sensitive species. Erosion control measures will be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued at the Project site until such time that soil stabilization is deemed adequate.

  Brush or other similar debris material will not be placed within any stream channel or on its banks. No Project work activity is planned within the limits of any stream channel.

3.5 Cultural Resources

APM Cultural Resources (CR)-1: Archaeological site avoidance. To ensure that Æ-1857-3H is not inadvertently damaged during implementation of the Project, the limits of the work areas listed in Potential Impact CR-1 will be marked with readily visible flagging tape and the construction crews will be instructed that there will be no vehicle access, travel, equipment staging and storage, or other construction-related work outside of the flagged work areas when working at Pole 13.

APM CR-2: Pre-construction Worker Education Program. PG&E will design and implement a Worker Education Program that will be provided to all Project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program.

The Worker Education Program shall include, at a minimum:

- A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the Project vicinity.
- A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation.
- A discussion of site avoidance requirements and procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the Project.
- A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies.
- A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and other applicable laws and regulations.

The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the Project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.

APM CR-3: Unanticipated discoveries management. In the unlikely event that previously unidentified cultural resources are uncovered during implementation of the Project, all work within 165 feet (50 meters) of the discovery will be halted and redirected to another location. PG&E's cultural resources specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, the resource will be documented on State of California Department of Parks and Recreation cultural resource records and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, PG&E will evaluate the significance and CRHR eligibility of the resources, and implement data recovery excavation or other appropriate treatment measures if warranted.

3.6 Geology and Mineral Resources

APM Geology and Mineral Resources (GM)-1: Appropriate design measures implementation. A landslide survey of the planned Project alignment will be conducted, which will include a reconnaissance to identify potential problems at planned pole locations. Appropriate design features will be developed where potential problems are found to exist. Appropriate design features may include excavation of potentially problematic soils during construction and replacement with engineered backfill, relocation of poles to avoid problematic soils or landslide areas, and pole depth specifications.

APM GM-2: Soft or loose soils during construction minimization. Where soft or loose soils are encountered during construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils encountered during construction. Such measures may include:

- Locating construction facilities and operations away from areas of soft and loose soil.
- Over-excavating soft or loose soils and replacing them with engineered backfill materials.
- Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.
- Treating soft or loose soils in place with binding or cementing agents.

Construction activities in areas where soft or loose soils are encountered will be scheduled for the dry season to allow safe and reliable equipment access.

APM GM-3/Water Quality (WQ)-3: Erosion Control and Sediment Transport Plan implementation. An Erosion Control and Sediment Transport Plan will be prepared in association with the Storm Water Pollution Prevention Plan (SWPPP). This plan will be prepared in accordance with the Water Board guidelines and other applicable Best Management Practices.

Implementation of the plan will help stabilize disturbed areas and waterways and will reduce erosion and sedimentation. The plan will designate Best Management Practices that will be followed during construction activities. Erosion-minimizing efforts may include measures such as:

- Avoiding excessive disturbance of steep slopes.
- Using drainage control structures (straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Strictly controlling vehicular traffic.
- Implementing a dust-control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas where applicable following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities.

Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures such as silt fences or straw wattles intended to minimize erosion from temporarily disturbed areas will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the proposed Project, which includes slopes, intermittent and seasonal streams, and the Santa Ynez River. BMPs documented in the Erosion Control and Sediment Transport Plan will also be included in the SWPPP.

APM GM-4: Slope instability during construction minimization. Temporary construction slopes and existing natural or constructed slopes impacted by construction operations will be evaluated for stability. In developing grading plans and construction procedures for access roads and power poles, the stability of both temporary and permanent cut, fill, and otherwise impacted slopes will be analyzed. Construction slopes and grading plans will be designed to limit the potential for slope instability and minimize the potential for erosion and flooding during construction. During construction, slopes affected by construction operations will be monitored and maintained in a stable condition. Construction activities likely to result in slope instability will be suspended, as necessary, during and immediately following periods of heavy precipitation when unstable slopes are more susceptible to failure.

3.7 Hazards and Hazardous Materials

APM Hazards and Hazardous Materials (HM)-1: Hazardous Substance Control and Emergency Response Plan development and implementation. PG&E has and will implement its systemwide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the Project Stormwater Pollution Prevention Plan (SWPPP) (see also APM WQ-3 and APM WQ-4).

Emergency-spill supplies and equipment will be available to respond in a timely manner, if an incident should occur. Response materials such as oil-absorbent material, tarps, and storage drums will be used as needed to contain and control any minor releases.

A search of government databases indicates that there are no hazardous waste sites located within the Project area. If hazardous materials are encountered in excavated soils or groundwater as noted through sheen, odor, or other nontypical appearance, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. If excavation of hazardous materials is required, they will be handled, transported, and disposed of in accordance with federal, state, and local regulations.

Removed wood poles will be collected in project-specific containers at a PG&E Service Center designated as a PG&E consolidation site. Poles will be scheduled for transportation to the appropriate licensed Class 1 or a composite-lined portion of a solid waste landfill as containers are filled. Chemical Waste Management (CWM) Kettlemen Hills is typically used. There is no disposal capacity issue associated with the treated wood poles generated by this Project that will be received at CWM.

APM HM-2/WQ-2: Environmental Training and Monitoring Program (ETMP) development and implementation. An environmental training program will be established to communicate to all field personnel any environmental concerns and appropriate work practices, including spill prevention and response measures and Best Management Practices

(BMPs). The training program will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific plans, including but not limited to the Project's SWPPP, Erosion Control and Sediment Transport Plan, Health and Safety Plan, and Hazardous Substances Control and Emergency Response Plan.

A monitoring program will also be implemented to ensure that the plans are followed throughout the construction period. BMPs, as identified in the Project SWPPP and Erosion Control and Sediment Transport Plan, will also be implemented during the Project to minimize the risk of an accidental release and to provide the necessary information for emergency response.

APM HM-3: Project-specific Fire Prevention and Response Plan development and implementation. PG&E will prepare a Fire Prevention and Response Plan that will include procedures to reduce the potential for igniting combustible materials. The plan will cover electrical hazards, flammable materials, smoking, and vehicle and equipment access during construction and maintenance procedures during subsequent operation. Project personnel will be directed to park away from dry vegetation; to equip vehicles with fire extinguishers; not to smoke; and to carry water, shovels, and fire extinguishers in times of high fire hazard. The plan will also cover procedures to reduce the potential fire hazard from operation of the power line.

3.8 Hydrology and Water Quality

APM Water Quality (WQ)-1: SWPPP development and implementation. PG&E will comply with all applicable federal, state, and local regulatory requirements that protect surface water and groundwater. PG&E will prepare and implement a SWPPP that will include BMPs to minimize construction impacts on surface and groundwater quality and will include, at a minimum, measures such as:

- APM WQ-2, Worker Environmental Awareness specific to this Project.
- APM WQ-3, Erosion Control and Sediment Transport measure implementation.
- APM WQ-4, Hazardous Substance Control and Emergency Response measure specific to this Project.

The SWPPP will be prepared once the Project is approved.

APM WQ-2/HM-2: Environmental Training and Monitoring Program (ETMP) development and implementation. Worker environmental awareness will communicate environmental issues and appropriate work practices specific to this Project. This awareness will include spill prevention and response measures and proper BMP implementation. The SWPPP training will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific water quality requirements, including applicable portions of , the Erosion Control and Sediment Transport Plan, Health and Safety Plan, and PG&E's Hazardous Substances Control and Emergency Response program.

A monitoring program will also be implemented to ensure that the plans are followed throughout the construction period. BMPs, as identified in the Project SWPPP and Erosion Control and Sediment Transport Plan, will also be implemented during the Project to minimize the risk of an accidental release and to provide the necessary information for emergency response.

APM WQ-3/GM-3: Erosion Control and Sediment Transport Plan preparation and implementation. An Erosion Control and Sediment Transport Plan will be prepared in association with the SWPPP. This plan will be prepared in accordance with Water Board guidelines and other applicable BMPs.

Implementation of the plan will help stabilize disturbed areas and waterways and will minimize erosion and sedimentation. The plan will designate BMPs that will be followed during construction activities. Erosion-minimizing efforts may include measures such as:

- Avoiding excessive disturbance of steep slopes.
- Using drainage control structures (straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Defining ingress and egress.
- Implementing a dust control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas where applicable following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities.

Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the proposed Project, which includes slopes, intermittent and seasonal streams, and the Santa Ynez River. BMPs documented in the Erosion Control and Sediment Transport Plan will also be included in the SWPPP.

APM WQ-4: Hazardous Substance Control and Emergency Response Plan implementation. PG&E has and will implement its system-wide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the Project Stormwater Pollution Prevention Plan (SWPPP).

A search of government databases indicates that there are no hazardous waste sites located within the Project area. If hazardous materials are encountered in excavated soils or groundwater, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment (see Section 4.7, Hazards and Hazardous Materials, for additional discussion). If excavation of hazardous materials is required, these materials will be handled, transported, and disposed of in accordance with federal, state, and local regulations.

3.9 Noise

APM Noise (NO)-1: Noise minimization with portable barriers. Compressors and other small stationary equipment will be shielded with portable barriers in proximity to residential areas.

APM NO-2: Noise minimization with "quiet" equipment. "Quiet" equipment (i.e., equipment that incorporates noise-control elements into the design—compressors have "quiet" models) will be used during construction whenever possible.

APM NO-3: Noise minimization through direction of exhaust. Equipment exhaust stacks and vents will be directed away from buildings.

APM NO-4: Noise minimization through truck traffic routing. Truck traffic will be routed away from noise-sensitive areas where feasible.

APM NO-5: Noise disruption minimization through residential notification. PG&E will coordinate with the City of Lompoc and the County of Santa Barbara to notify residents that are located near the power lines of the timeframe for the construction activities.

3.10 Population, Housing, Public Services, Utilities, and Service Systems

Construction and operation and maintenance activities will have no impact; therefore, no APMs are suggested.

3.11 Traffic and Transportation

APM Traffic and Transportation (TT)-1: Traffic Management Plan development and implementation. PG&E will follow its standard safety practices, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. PG&E is a member of the California Joint Utility Traffic Control Committee, which published the Work Area Protection and Traffic Control Manual. PG&E will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. The establishment of a Traffic Management Plan (TMP) will address haul routes, timing of heavy equipment and building material deliveries, potential street and/or lane closures, signing, lighting, and traffic control device placement. Notification to the public of temporary road closures will be provided as prescribed by a Santa Barbara County Road Closure and/or encroachment permit. In particular, all construction activities shall be coordinated with local law enforcement and fire protection agencies. Emergency service providers will be notified of the timing, location, and duration of construction activities.

APM TT-2: Lift Plan development and implementation. A Lift Plan will be prepared and approved by the FAA prior to all construction helicopter operations. PG&E does not anticipate that residents will be required to temporarily vacate their homes. In the unlikely event that final construction plans and the Lift Plan require otherwise, PG&E will coordinate with potentially affected residents (providing a minimum of 30 days notice) to minimize the duration of the necessary work and any resultant inconvenience. The implementation of this measure will minimize impact TT-2 to a less than significant level.

3.12 Corona and Induced Current Effects

Corona impacts will not occur from the reconductoring and pole replacement. The Project will not change from the existing conditions since the voltage and current will not change. No induced current effects impact will result and no mitigation is proposed.

3.13 Cumulative Impacts

The Project will have no cumulative or growth-inducing impacts; therefore, no APMs are suggested.

4.0 Impact Assessment Summary

4.1 Aesthetics

4.1.1 Introduction

This section discusses the visual setting of the area within which the Project is proposed, and the potential aesthetic impact on the surrounding areas that may result from the reconductoring proposed as part of the Project.

I. AESTHETICS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	❐	❐	❐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	❐	❐	❐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	❐	❐	☒	❐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	❐	❐	❐	☒

There would be a less-than-significant impact to visual resources from the Project. The Project would replace existing wood power poles with light-duty steel poles within a 14.1-mile segment of a power line extending from 0.5 mile east of Cabrillo Substation, located in the southeastern portion of Lompoc, to Santa Ynez Switching Station, north of Buellton. The existing single-circuit conductor would also be replaced. Figure 4.1-1a, located at the end of this section, shows the Project area and indicates the portion of the existing power alignment proposed to be reconductured. Because the replacement of these facilities would occur within an existing power corridor, there would be no substantial alterations to the visual environment resulting from the Project. Replacement of insulators on the approximately 0.5 mile section of the line extending into Cabrillo Substation will not result in any noticeable visual changes and is not discussed further.

4.1.2 Methodology

Aesthetics, or visual resources, are the natural and cultural features of the landscape that can be seen and that contribute to the public's appreciative enjoyment of the environment. Visual resource or aesthetic impacts are generally defined in terms of a project's physical characteristics and potential visibility and the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located.

4.1.2.1 Study Procedure

The study process began with a review of maps on which the Project features had been plotted. Locations along nearby public roads from which the Project would likely be visible were identified. The site was visited in February, 2009, in order to document the existing visual conditions in the Project area. Photographs were taken toward the locations of the Project features from representative viewpoints, and from these viewpoints, a set of Key Observation Points (KOPs) was selected to use as the basis for the analysis. The selection of the views discussed here was informed by CEQA guidelines for the evaluation of aesthetic impacts on the environment from a proposed project, which are discussed in greater detail in Section 4.1.4.

As a part of the process of evaluating the visual sensitivity of views, a review was made of the plans, regulations, ordinances, and design standards adopted by each of the jurisdictions through which the Project would pass to identify any provisions that designate specific landscape areas or features as scenic resources deserving of special protection.

For the view from each of the KOPs, a photograph was selected to provide the basis for development of a simulation to depict the view as it would appear with the completed Project in place. The photographs used as the basis for the simulations were all taken with a digital camera set to take photos equivalent to those taken with a 35 mm camera using a 50 mm focal length. Single frame images were used. For each view, computer modeling and rendering techniques were used to produce the simulated images. Existing topographic and site data provided the basis for developing an initial digital model. PG&E provided site plans (including approximate pole locations), digital data, and power pole illustrations for the proposed facilities. These were used to create three-dimensional (3 D) digital models of the reconductored power poles and lines. These models were then combined with the digital site model to produce a complete computer model of the Project as seen within the views from KOPs.

For each simulation viewpoint, a viewer location was digitized from topographic maps and scaled aerial photographs, using five feet as the assumed viewer eye level. Computer "wire frame" perspective plots were then overlaid on the photographs of the views from the simulation viewpoints to verify scale and viewpoint location. Digital visual simulation images were produced as a next step based on computer renderings of the 3 D model combined with high-resolution digital versions of base photographs. The final "hardcopy" visual simulation images that appear in this document were produced from the digital image files using a color printer.

Comparison of the "before" photographs with the simulations of the Project as it would appear after construction provided the basis for determining Project impacts on views and visual quality. Analysis of the views was informed by the evaluative process set out by the Federal Highway Administration in Visual Impact Assessment for Highway Projects (FHWA, 1988). This analysis approach was developed by a major federal agency that invested considerable resources in its creation, testing, and implementation. As a result, this approach is robust and is now widely used to provide systematic and objective evaluations of visual change. The FHWA visual quality and aesthetics assessment method addresses the visual qualities and characteristics of the existing landscape in the Project area, the Project's potential effects on the area's visual quality and aesthetics, and the likely level of concern about or reaction by viewers to how the Project visually fits within the existing landscape.

In the FHWA visual analysis method, visual quality is evaluated and discussed using these terms:

- Vividness is the degree of drama, memorability, or distinctiveness of the landscape components.
- Intactness is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features and is not broken up by features and elements that are out of place. Low intactness means that visual elements can be seen in a view that are unattractive and/or detract from the quality of the view.
- Unity is the degree of visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components and their relationship in the landscape or an undisturbed natural landscape.

The study area and landscape units defined through this process for the Project are described under Environmental Setting. Figure 4.1-1a is a map of the Project area, and Figure 4.1-1b shows the location within the Project area of each of the three KOPs used in this analysis. Figures 4.1-2 through 4.1-4 show existing and simulated views of the Project from each of the KOPs. All figures are located at the end of this section.

4.1.3 Existing Conditions

4.1.3.1 Regulatory Background

This section describes the laws, ordinances, regulations, and standards (LORS) relevant to the visual resource issues associated with the proposed Project.

Federal

No federal LORS apply to the lands through which the Project is proposed to extend.

State

The segments of SR 1 and US 101 that pass near the Project area are listed as eligible for designation as state scenic highways. The eligible segment of SR 1 extends to the intersection of SR 1 and SR 246, which is approximately 0.2 miles south of the nearest power pole proposed to be reconductored and replaced. The eligible segment of US 101 is approximately 0.2 miles east of the easternmost pole proposed to be reconductored and replaced. The California Scenic Highway Program protects and enhances the natural scenic beauty of California highways and adjacent corridors through special conservation treatment (California Department of Transportation, 2008). A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway. No Corridor Protection

Program has been adopted for either highway and neither has been adopted as a California Scenic Highway.

Local

The CPUC has exclusive jurisdiction of the Project; therefore, the Project is not subject to local land-use regulations. The following analysis of local regulations relating to visual resources is provided for informational purposes and to assist with CEQA review. A segment of the westernmost part of Project corridor is on land within the limits of the City of Lompoc and the remainder of the Project corridor is on land in unincorporated Santa Barbara County. This section reviews visual resource-related LORS contained within the General Plan and Codes of these two jurisdictions.

Table 4.1-1 lists the visual resource related plans and ordinances that are pertinent to the Project. Specific provisions of each plan or ordinance that have potential relevance to the Project are discussed below.

TABLE 4.1-1
Laws, Ordinances, Regulations, and Standards for Visual Resources
Cabrillo - Santa Ynez 115 kV Reconductoring Project

LORS	Requirements/Applicability	Administering Agency
County of Santa Barbara General Plan (1979 – 2002) including the Draft Santa Ynez Valley Community Plan (2006)	Comprehensive long-range plan to serve as the guide for the development of the County.	County of Santa Barbara, Planning and Development, Office of Long-Range Planning
County of Santa Barbara Land Use and Development Code (2008)	Establishes land use regulations for unincorporated parts of the County.	County of Santa Barbara, Planning and Development
City of Lompoc General Plan (1997, as amended 2007)	Comprehensive long-range plan to serve as the guide for the development of the City.	City of Lompoc Community Development Department, Planning Division

County of Santa Barbara General Plan

The provisions of the County of Santa Barbara General Plan Land Use Element (1979) relating to visual resources are discussed in detail in Section 4.2, Land Use. Visual resources policies that specifically relate to the Project area are listed in Table 4.1-2, below. The Draft Santa Ynez Valley Community Plan (2006) section of the Land Use Element also includes visual resource policies related to the Project site, which are also included in Table 4.1-2. As described below, a Scenic Corridor is located adjacent to the Project area, and there are a number of areas identified by the County of Santa Barbara as having high or moderate scenic visual quality.

TABLE 4.1-2
Conformity with the County of Santa Barbara General Plan Land Use Element: Draft Santa Ynez Valley Community Plan
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Provision	Description
County of Santa Barbara General Plan Land Use Element. Goals and Policies. Visual Resources Policies. Policy 2.	In areas designated as rural on the land use plan maps, the height, scale, and design of structures shall be compatible with the character of the surrounding natural environment, except where technical requirements dictate otherwise. Structures shall be subordinate in appearance to natural landforms; shall be designed to follow the natural contours of the landscape; and shall be sited so as not to intrude into the skyline as seen from public viewing places.
Santa Ynez Valley Community Plan. Section E. VISUAL AND AESTHETIC RESOURCES. Planning Issues. General Goals.	Mitigate development that degrades scenic resources through proper siting, design, landscaping, and/or screening, and use of colors and materials that are harmonious with the natural environment.
Santa Ynez Valley Community Plan. GOAL VIS-SYV-1	Protect the Rural/Agricultural Character and Natural Features of the Planning Area, Including Mountain Views, Scenic Corridors and Buffers, Prominent Valley Viewsheds, and the Quality of the Nighttime Sky.
Santa Ynez Valley Community Plan. Policy VIS-SYV-1	Development of property should minimize impacts to open space views as seen from public roads and viewpoints and avoid destruction of significant visual resources.

Source: County of Santa Barbara, 1979, 2006.

The Project area includes one County-identified Scenic Corridor, US 101 north of Buellton (the Scenic Corridor extends to Los Alamos, approximately 15 miles away). Scenic resources include lands identified as being of high and moderate scenic quality. Table 4.1-3 lists the definitions of high and moderate scenic quality levels, as defined in the Scenic Values section of the Santa Barbara County Comprehensive Plan Open Space Element (County of Santa Barbara, 1979; amended through 1991). The Project area includes lands that are of high and moderate scenic quality, as shown in the Lompoc and Santa Ynez Valley Study Area Scenic Values maps, which are included in the Open Space Element. Specifically, the Santa Rita River, in the western portion of the Project area, is an area of high scenic quality, as are scattered tracts of land located throughout the Project area, north and south of SR 246. There are also areas to the west of US 101 within the Project area identified as having high or moderate scenic quality.

TABLE 4.1-3
Santa Barbara County Comprehensive Plan Open Space Element – Scenic Quality Discussion
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Scenic Quality Rating	Definition
High	Indicates areas having attributes which warrant strong consideration for open space designation and preservation.
Moderate	Indicates the advisability of prescribing special design standards, and subjecting plans to design review by the Planning Commission before development is permitted.

Source: County of Santa Barbara, 1979; 1991.

County of Santa Barbara Land Use and Development Code

The provisions of the County of Santa Barbara Code that address visual resources are discussed in detail in Section 4.2, Land Use, and are summarized in Table 4.1-3.

TABLE 4.1-3
Conformity with the County of Santa Barbara Land Use and Development Code
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Provision	Description
35.30.100.D. Services, utilities and related facilities within the Coastal Zone. 1. Electrical transmission lines. a. Protection of viewshed and resources.	Transmission line rights-of-way shall be routed to minimize impacts on the viewshed, especially in scenic rural areas, and to avoid locations that are on or near archaeological, habitat, or recreational resources, whenever feasible.

Source: County of Santa Barbara, 2008

City of Lompoc General Plan

A segment of the westernmost part of the Project site is within the limits of the City of Lompoc. The provisions of the City of Lompoc General Plan that address visual resources are discussed in detail in Section 4.2, Land Use, and are summarized in Table 4.1-4.

TABLE 4.1-4
Conformity with the City of Lompoc General Plan

Provision	Description
Land Use Element. Policy 5.8.	Development proposals in the vicinity of natural objects that have unique aesthetic significance shall not be permitted to block, alter, or degrade existing visual quality without the provision of suitable visual enhancement. This may include open space, eucalyptus groves, or vegetation that serves as a view corridor or has important visual attributes. Development proposals shall be sited to ensure that these features are retained or replaced to the extent feasible, resulting in minimal view impairment. [Final EIR Urban Design Mitigation Measure 1a].

TABLE 4.1-4
Conformity with the City of Lompoc General Plan

Provision	Description
Public Services Element. Policy 3.2	The City shall ensure that routes and facilities for pipelines and utility transmission lines are compatible with surrounding existing and planned land uses.

Source: City of Lompoc, 2007.

Summary of Project's Conformity with Applicable LORS

The Project complies with applicable state and federal laws, and is consistent with local ordinances, regulations, and standards related to visual resource issues. The Project would replace existing power poles and a conductor within a previously constructed power alignment. A complete discussion of the Project's visual effects is included in Section 4.1.4 below.

In summary, the replacement poles would conform to the County of Santa Barbara General Plan (including the Draft Santa Ynez Valley Community Plan). Existing structures are subordinate in appearance to natural landforms, and replacement poles will not substantially increase the degree to which the poles intrude into the skyline as seen from public viewing places. Scenic resources would not be further degraded by the Project, which will replace existing poles with light duty steel pole with a rusty, weathered appearance. The appearance is similar to a weathered wood pole, therefore minimizing the change to the existing appearance. There would be no alterations to scenic corridors. No visual resources would be destroyed as the result of the replacement of power poles and conductor.

The Project would be consistent with the County of Santa Barbara Land Use and Development Code in that there would be no new effects on viewsheds. Finally, the Project would be consistent with the City of Lompoc General Plan policies listed in Table 4.1-4. The Project is not a new development; the replacement of power poles and conductor would not substantially degrade the existing visual quality and would not result in any new view impairment. The Project would be located within an existing power alignment and would therefore be compatible with land uses in the immediate surroundings.

4.1.4 Environmental Setting

Regional

The reconductoring portion of the Project area extends from 0.5 mile east of Cabrillo Substation, located in the southeastern portion of Lompoc to Santa Ynez Switching Station, located just north of Buellton on US 101. The power line travels through the Santa Rita Valley, through which the Santa Ynez River flows. The Santa Rosa Hills are to the north of the river, and the Santa Rita Hills are to the south. Agriculture is the predominant land use in this part of Santa Barbara County. The Santa Ynez Valley, located to the east of the Project area, is an area known for its wine production.

Local

The Project area is categorized geographically into four general areas ("landscape units"): Lompoc; SR 246 crossing; a residential subdivision north of Buellton; and US 101. Views are discussed below by landscape unit. Key Observation Points (KOPs) used in the analysis of potential visual impacts are located in the SR 246 crossing, residential and US 101 landscape units. Views from these locations are shown in Figures 4.1-2 through 4.1-4, as referenced below.

Lompoc Landscape Unit

Cabrillo Substation is located in the southeastern portion of the City of Lompoc, within a light industrial area. The immediate vicinity includes mostly industrial-appearing buildings and the power poles closest to the substation are obscured by warehouse structures in views from SR 246 and SR 1 (at the intersection with SR 246). This landscape unit is characterized by the transition to a more urbanized setting from the rural residential and agricultural uses that typify the SR 246 corridor to the east. Orchards and fields with row crops occupy the majority of land adjacent to the roadway, with residences and other uses nearby. These uses include a nursery located along SR 246 and La Purisima Mission State Historic Park (SHP), which is approximately 0.5 miles north of SR 246 and approximately 1.75 miles north of the power alignment (a segment of the power alignment is barely discernable in views toward the Project area from the entrance to the mission). Despite the increase in urban form and uses, the area just east of Lompoc affords long distance views to the east and west. Views to the east include the Santa Rita Valley, through which SR 246 travels. Views to the west include the City of Lompoc and, beyond, the peaks that separate the city from the Pacific Ocean. The Santa Ynez River intersects with SR 246 just east of Lompoc, and the riparian zone indicating its location is visible from SR 246. The Santa Ynez River is identified by Santa Barbara County as an area of high scenic value. River Park, which is a regional day use park and RV campground, extends along the eastern bank of the river. The park is accessed via River Park Road, which in turn is accessed via SR 246, just east of Lompoc.

Typical viewers in this area are motorists, the majority of whom are just entering or just departing Lompoc. Some motorists will be turning on to (or will have just turned off of) SR 1, at the eastern border of Lompoc. Local destinations for motorists in this area include River Park and La Purisima Mission SHP. Viewer sensitivity in the area is therefore considered to be moderately low.

Power poles are not proposed to be replaced in the westernmost portion of the Lompoc Landscape Unit, which includes the area where the existing power alignment is intermittently visible from a segment of SR 1. In other nearby areas, including the point where the existing power alignment intersects with SR 246, any increase in the heights of poles would be negligible. Because changes to existing views in this area would be minimally detectable to viewers, no existing view from this landscape unit is included here, and views of the proposed Project within the landscape unit are not considered in the analysis of visual impacts.

SR 246 Crossing Landscape Unit

In views from SR 246, the existing power poles are most visible near the location where the alignment intersects with and crosses the highway, approximately eight miles west of

Buellton. Along this segment of SR 246, the roadway runs in a northwest/southeast direction, and the area is characterized by the mix of agricultural and rural residential uses on the flat lands located to the east of the highway. The Santa Rosa Hills are further away from the road to the east, beyond the agricultural land and residences, while the northeastern edge of the Santa Rita Hills abuts the roadway on the west. Views of the power poles from SR 246 are unobstructed approaching the alignment crossing from both the east and the west.

Typical viewers in this area include motorists traveling at highway speeds along SR 246 and views of the power alignment would be relatively short in duration. Travelers turning off of the highway to visit Foley Estates Vineyard and Winery would be decelerating along this segment of the road, and would have somewhat longer views of the power alignment. Viewer sensitivity is therefore moderately low in this area. Figure 4.1-2a shows the view to the northwest of the power alignment from the westbound lane of SR 246. The entrance to the Foley Estates is located just east of the alignment.

The overall visual quality of this view is moderately low. The hills visible in the middleground and assorted vegetation in the foreground contribute an element of vividness to the view. However, the highway and its wide shoulder is the most prominent feature in the view. The intactness of the view is typical of views in the surrounding area in that vegetated hills appear behind intermittent roadside developments, which are associated with residences, farms and some businesses. This moderately low level of intactness is typical of views in the surrounding area, and the presence of multiple power lines in this view contributes to a similar degree of overall unity.

Residential Subdivision Unit

The residential subdivision north of Buellton is a privately accessed neighborhood of rural residences set among a series of hills on relatively large lots. A number of these properties include equestrian-related facilities (e.g., barns and riding rings), and a network of horse riding trails intersects with roads at a number of locations throughout the neighborhood. This area is hilly, with moderately dense vegetation, which allows for mostly short views of the surrounding area from the main roads (Bluebird Glen Road, Bobcat Springs Road, Cougar Ridge Road, and Poppy Valley Road). However, occasional long-distance views into the Santa Rita Valley to the south of the area are possible. Nearly all of the hilltops within the area are occupied by homes and, as a result, long winding driveways are frequently visible extending off of the main roads in the area. Most of the land adjacent to the roads and driveways is fenced in, and horses are frequently visible within the fenced areas. The existing power line passes through the residential area, with poles occasionally located near homes.

Typical viewers in this area include residents of the subdivision. Views of the existing power line are available from access roads, horse trails, and residences. Because of the residential character of the area, viewer sensitivity is considered to be high.

Figure 4.1-3a shows the view to the south from a viewpoint along Cougar Ridge Road, above the intersection with Bluebird Glen Road. In this view, an existing power pole, located near a house at the top of a hill, appears against the sky, extending above the skyline formed by the distant Santa Rita Hills.

The overall visual quality of this view is moderately high. Vivid natural features, particularly the Santa Rita Valley and hills, which appear as background to the hill and mature trees in the foreground, are prominent in this view. The clearly visible roads and horse riding areas, as well as the existing power pole (which appears as the tallest object in the foreground), encroach somewhat on these natural features. Further, evidence of the predominant uses in the area – rural residential and equestrian activities – are clearly visible, which results in a moderate degree of overall unity in the view.

US 101 Landscape Unit

The US 101 landscape unit is characterized by the presence of the four-lane highway, which runs along the eastern edge of the Project area in a generally north/south direction, and which is bordered on both sides by low but steep hills. In the vicinity of the power line's eastern terminus at Santa Ynez Switching Station, the grassy hillsides are spotted with clusters of oak trees. The hillside land to the south of Santa Ynez Switching Station is privately owned rangeland (see Figure 4.2-2). The Santa Ynez Valley Pistol and Bow Club is located to the immediate north of Santa Ynez Switching Station, occupying a gulley lower in elevation than the switching station. Jonata Park Road serves as a frontage road to US 101, and is the road by which Santa Ynez Switching Station is accessed.

Typical viewers in this area include motorists traveling along US 101 and people at the Pistol and Bow Club. Because of the screening provided by trees along the western edge of the roadway, views from the road toward the eastern end of the power line are intermittent. They are also short in duration due to the typical driving speeds on the highway. Views toward the Project site from within the Pistol and Bow Club are mostly obscured by trees and other vegetation. As such, viewer sensitivity in this area is low to moderate.

Figure 4.1-4a shows the view of the existing power line from the north, along Jonata Park Road. This view is approximately the same one seen by motorists traveling in the southbound lane of US 101. In this view, two of the existing power poles are visible against the sky, above the hillside.

The overall visual quality of this view is moderate. While the prevalence of mature trees and other vegetation results in a moderately high level of vividness, the visibility of existing power poles above the natural skyline detracts from the overall intactness of the view. Structures and other objects associated with the Pistol and Bow Club are also visible at varied locations throughout the otherwise natural setting. While subordinate to the natural features visible in the view, the power poles and other structures are prominent and result in a moderate degree of overall unity.

4.1.5 Potential Impacts and Mitigation

4.1.5.1 Potential Impacts

Significance criteria for the determination of impacts to aesthetics are from Appendix G of the CEQA Guidelines. Potential impacts to aesthetics are discussed below, in response to each of the CEQA criteria-related questions.

Would the Project:

I.a) Have a substantial adverse effect on a scenic vista? No impact will occur; no mitigation is needed.

There are no designated scenic vistas in the vicinity of the Project.

I.b) Damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? No impact will occur; no mitigation is needed.

This question does not apply to the proposed Project because none of the Project facilities would fall within the boundaries of a state scenic highway.

I.c) Substantially degrade the existing visual character or quality of the site and its surroundings? A less-than-significant impact will occur; no mitigation is needed.

The proposed Project would not substantially degrade the existing visual character or quality of the site and its surroundings. The Project would occur within an existing power alignment, and replacement poles would be light-duty steel poles with a rusty, weathered appearance intended to minimize the apparent difference in color and texture between new poles and existing wooden poles. Most new power poles would be approximately the same height as existing poles, and would typically be placed approximately within 5 feet of the existing pole locations. Implementation of Applicant Proposed Measure AE-1, as described in Section 4.1.4.2, would ensure that the replacement conductor would not be a source of any additional reflectivity in the Project area.

An exception to these changes would be the poles visible from KOP 1, the westbound lane of SR 246 (see Figure 4.1-2b). Here, the two existing, 70-foot-tall poles would be replaced by an 85-foot-tall pole and 90-foot-tall pole (left to right in the view), respectively. In addition, the pole closest to the center of the view would be replaced by a pole approximately 35 feet away from the current location, within the power alignment.

These alterations would not substantially affect the visual character or quality of site in views from KOP 1. While the poles would appear somewhat more prominent compared with the current view, they would remain subordinate as components of the view to the roadway and hills. The hilltop in the right side of the view would remain the tallest feature in the view, and the highway and its shoulder would continue to characterize much of the view's foreground. The increased height of the poles would make the moderately low level of intactness in the existing view more pronounced, but not in any way that would substantially impact the view's overall unity. Viewers in the area, including motorists traveling along the highway and visitors to Foley Estates, would not be likely to experience any substantial change in visual quality or to note a substantial alteration to the area's visual character as a result of the proposed Project.

In the view from KOP 2, within the residential area (Figure 4.1-3b), the replacement power pole would be approximately 70 feet tall, which is approximately 5 feet taller than the existing power pole, and placed in approximately the same location. The difference in height between the existing and proposed poles would be barely detectable. Similarly, in the view from KOP 3, near US 101 (Figure 4.1-4b), the existing 55-foot-tall power poles would be replaced by approximately 60-foot-tall power poles, in approximately the same location.

In both of these views, the slight increase in height would not substantially alter or degrade the existing visual character of the area or the quality of views. The poles would appear different in design and slightly taller than they are at present. In both views, the poles would continue to be visible against the sky, but the slight increase in height would not result in any encroachment that does not already exist in current views. Natural features currently visible would not be obstructed by the replacement poles, and so the Project would not result in any substantial effects to the vividness in the area. The overall unity of these views would remain unchanged, and there would be no substantial change to the existing visual quality of views. Further, viewers – mostly residents from KOP 2 and mostly motorists from KOP 3 – would not be expected to notice any substantial change to the visual character of these areas compared with what currently exists.

I.d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? No impact will occur; no mitigation is needed.

There is generally no lighting associated with the power line, and none will be installed as part of the Project. The power poles do not constitute a source of glare at the present. Replacement power poles would be light duty steel pole with a rusty, weathered appearance. The appearance is similar to a weathered wood pole and would not constitute a source of glare after Project completion.

4.1.5.2 Applicant Proposed Measures

PG&E will implement the following Applicant Proposed Measure (APM) to minimize impacts to aesthetics:

APM AE-1: New source of substantial light or glare avoidance. PG&E will replace the existing conductor with a non-specular conductor for the specific purpose of minimizing the reflectivity of any new Project facilities.

4.1.5.3 Construction

No impacts to visual resources resulting from construction activities, either temporary or permanent, are anticipated.

4.1.5.4 Operation and Maintenance

No impacts to visual resources specific to Project operation and maintenance are anticipated.

4.1.6 Works Cited

California Department of Transportation. 2009. *California Scenic Highway Program*.

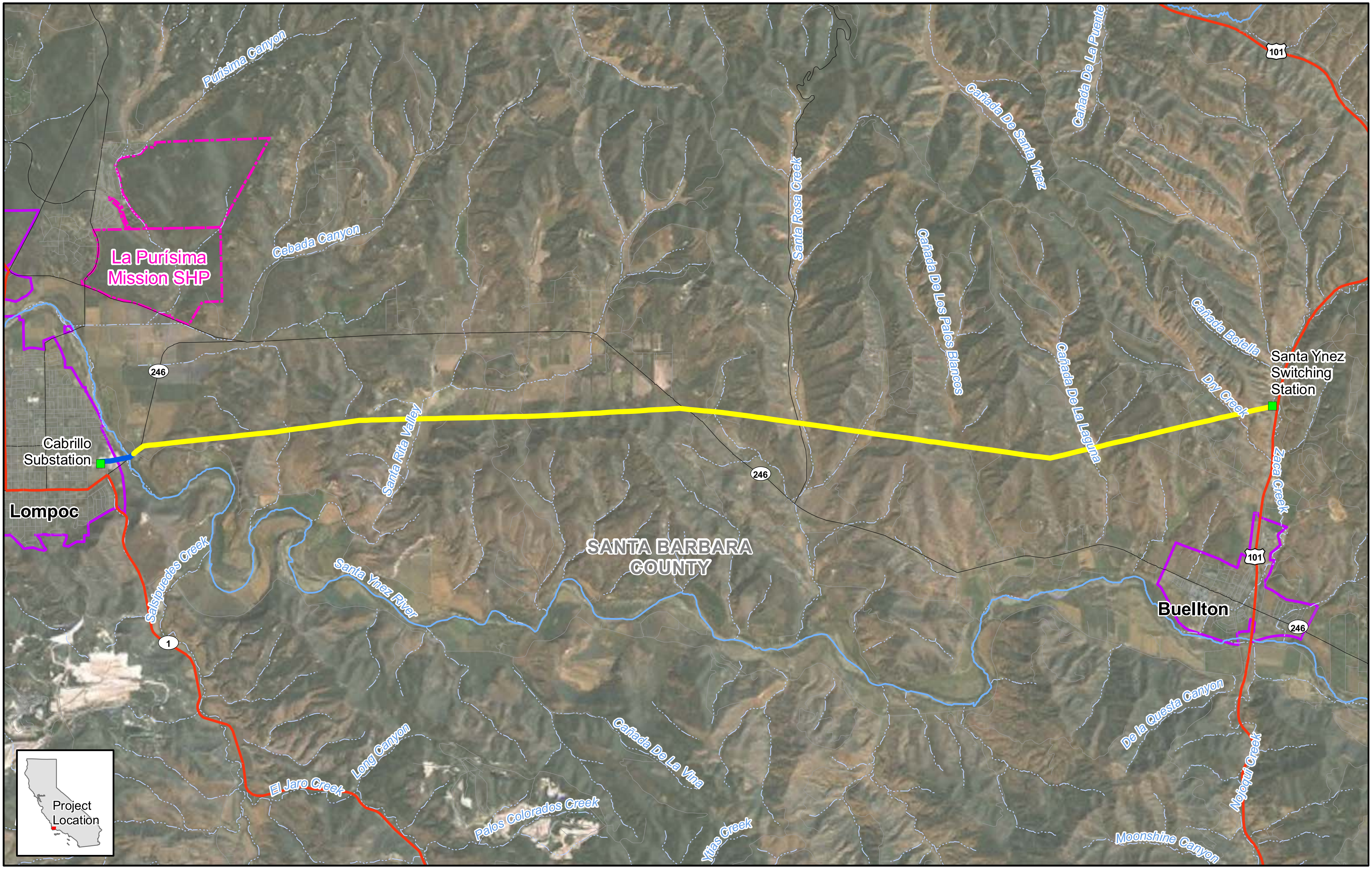
City of Lompoc. 1997. *City of Lompoc General Plan*. Amended 2005.

Santa Barbara County. 1979. *Santa Barbara County Comprehensive Plan*.

________. 2006. *Draft Santa Ynez Valley Community Plan*. September.

United States Department of Agriculture Forest Service. 1995. *Landscape Aesthetics: A Handbook for Scenery Management. Agriculture Handbook No. 701.* December.

United States Department of Transportation Federal Highway Administration. 1988. *Visual Impact Assessment for Highway Projects*.



Substation

Work Proposed on Power Line

Reconductoring

Insulator Replacement Only

City Boundaries

La Purísima Mission SHP

Creeks

Rivers

Highway

Major Road

Local Road

PG&E

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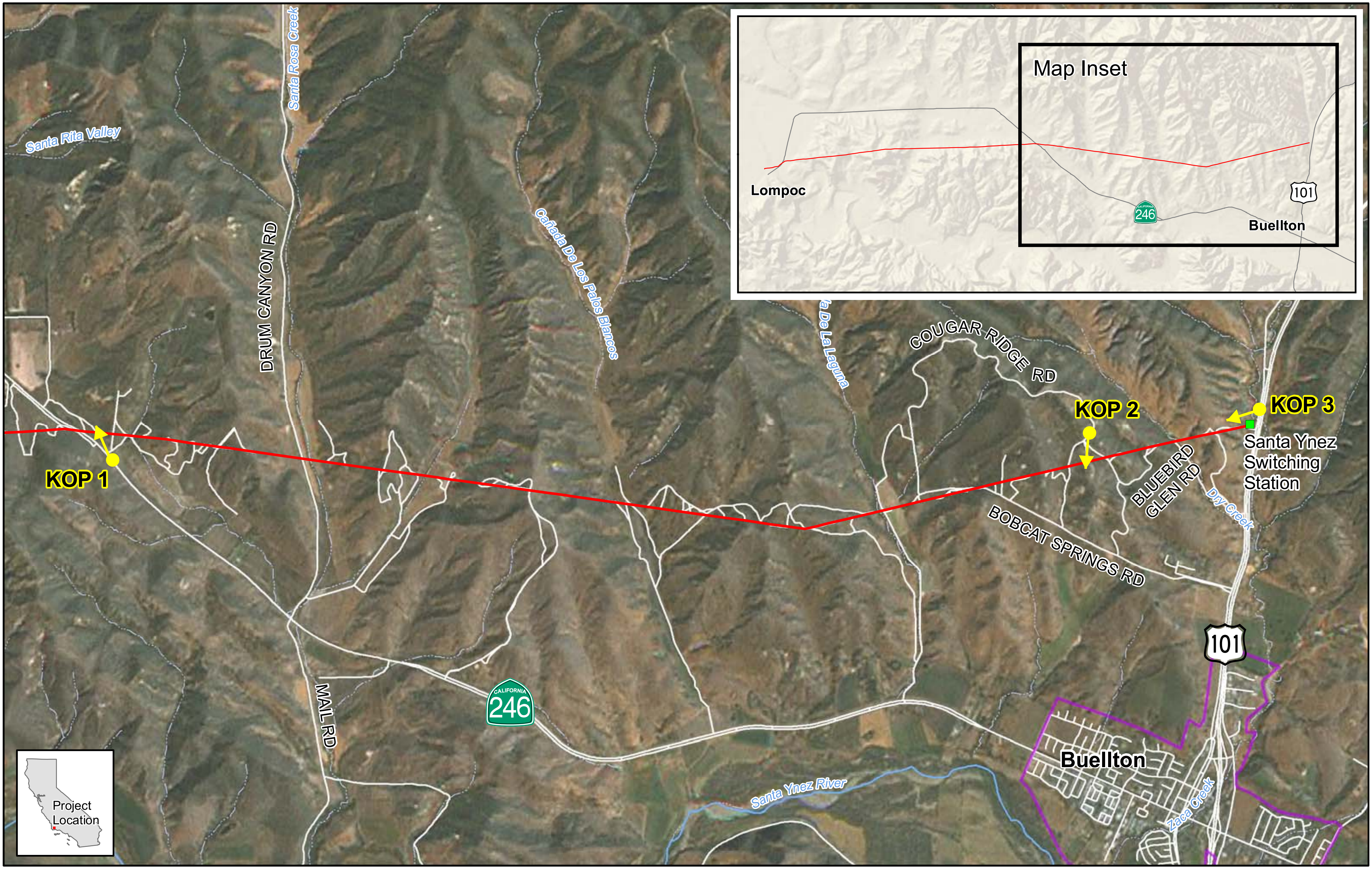
FIGURE 4.1-1a
Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 1 2 Miles

Scale: 1:100,000



Key Observation Points

Substation

Cabrillo - Santa Ynez Power Line

City Boundaries

Creeks

Rivers

Rev. 6: 06/29/2009

FIGURE 4.1-1b
Key Observation Point Locations
Cabrillo - Santa Ynez 115kV Reconductoring Project

0 0.5 1 Miles

N

Scale: 1:50,000

View to the northwest from the shoulder of the westbound lane of SR 246. The entrance to Foley Estates Vineyard and Winery is visible in front of this KOP. The Santa Rosa Hills are visible in the distance in the right side of this view.

FIGURE 4.1-2a
Key Observation Point 1
Cabrillo-Santa Ynez 115kv Reconducting

View from KOP 1 with reconductoring.

FIGURE 4.1-2b
Key Observation Point 1
Cabrillo-Santa Ynez 115kv Reconducting

View to the south from Cougar Ridge Road above Bluebird Glen Road. A residence is visible to the left of a pole proposed to be reconductored as part of the Project. The Santa Rita Hills are visible in the distance.

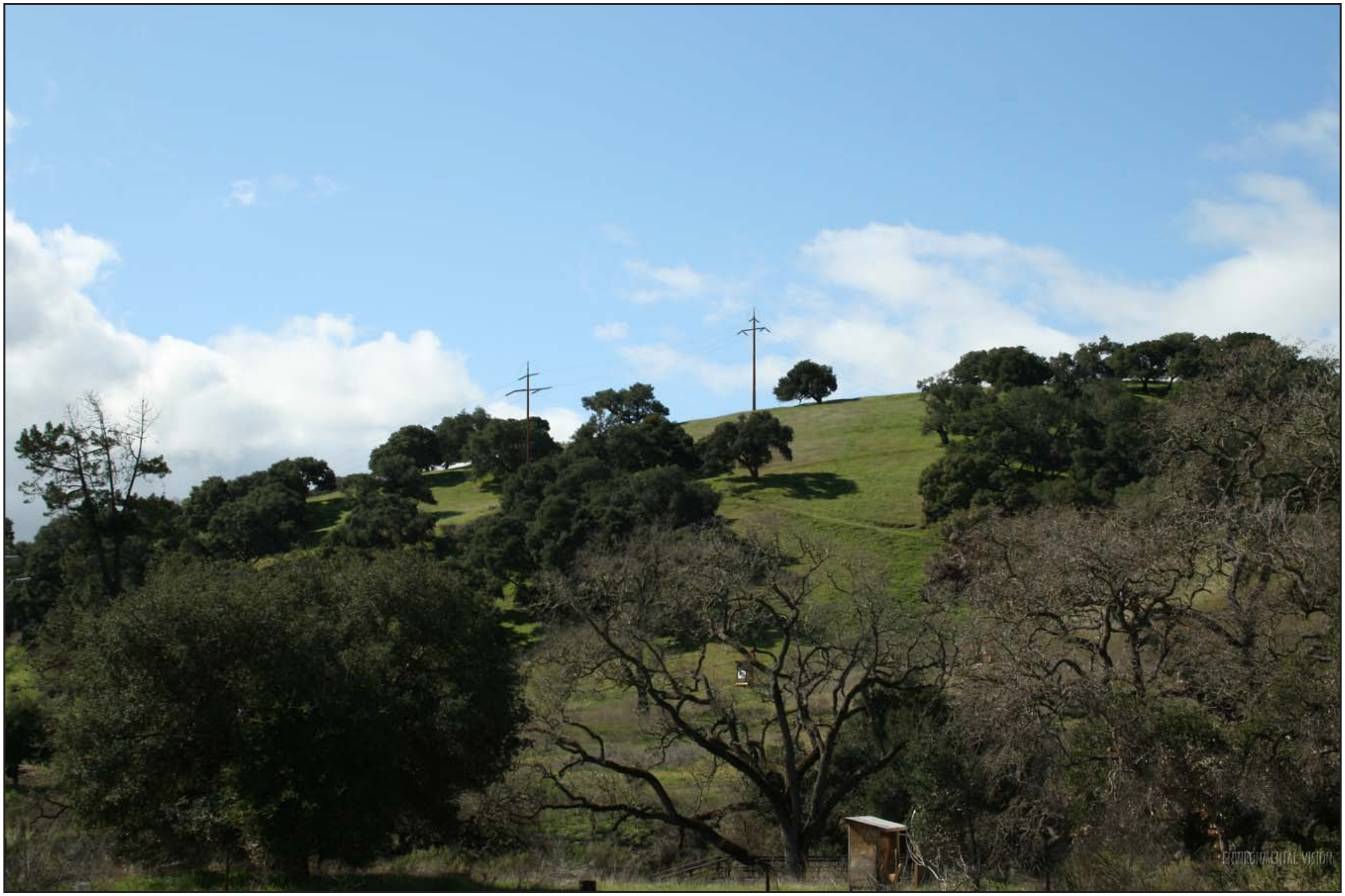
FIGURE 4.1-3a
Key Observation Point 2
Cabrillo-Santa Ynez 115kv Reconducting

View from KOP 2 with reconductoring.

FIGURE 4.1-3b
Key Observation Point 2
Cabrillo-Santa Ynez 115kv Reconducting

View to the southwest from Jonata Park Road, adjacent to US 101. Structures associated with the Santa Ynez Valley Pistol and Bow Club are visible in the lower center portion of the view. Santa Ynez Switching Station is located to the south of this KOP, and is left of this view.

FIGURE 4.1-4a
Key Observation Point 3
Cabrillo-Santa Ynez 115kv Reconducting



View from KOP 3 with reconductoring.

FIGURE 4.1-4b
Key Observation Point 3
Cabrillo-Santa Ynez 115kv Reconducting

4.2 Agricultural Resources, Land Use and Recreation

4.2.1 Introduction

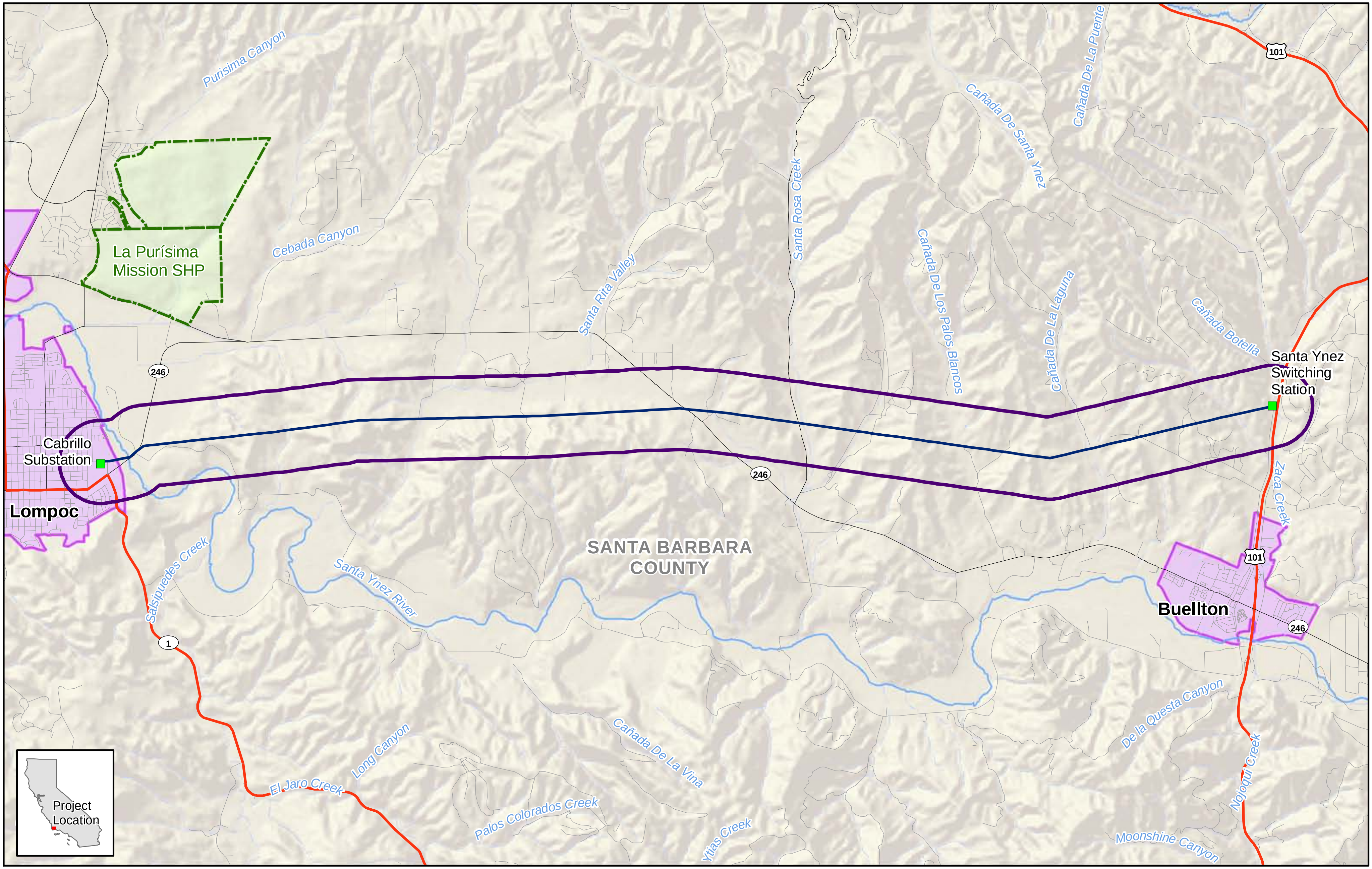
This section describes existing agricultural resources, land use and recreation within the Project area, analyzes potential impacts to these resources from the Project and concludes that any impacts will be less than significant. The following significance criteria derived from the CEQA Checklist summarize the significance of the potential impacts to agricultural resources, land use, recreation and planning.

II. AGRICULTURAL RESOURCES -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Convert land designated as prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Change the environment resulting in conversion of designated farmland to nonagricultural use?	☐	☐	☒	☐
IX. LAND USE -- Would the Project:				
a) Create physical division of an established community?	☐	☐	☐	☒
b) Conflict with applicable land use plans, policies, or regulation of an agency with jurisdiction over the project?	☐	☐	☐	☒
c) Conflict with an applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP)?	☐	☐	☐	☒
XIV. RECREATION -- Would the Project:				
a) Create an increase in the use of existing parks or other recreational facilities?	☐	☐	☐	☒
b) Create construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Public utility power lines are compatible with all of the land use designations in the Project area. The Project is compatible with all applicable environmental plans and policies adopted by local agencies responsible for land use planning in the Project area. The Project will not impact recreational resources. Jurisdictional boundaries in the Project area are shown in Figure 4.2-1.

4.2.2 Methodology

Various documents and reference materials were reviewed to complete this analysis, including Google Earth aerial photos of the Project area, City and County general plans and zoning ordinances, and related environmental impact reports (see Section 4.2.5, Works Cited). In addition, on-site surveys were conducted along the power line routes and at the substation sites where public access was available.



Substation	Creeks
Cabrillo - Santa Ynez Power Line	Rivers
Half-mile Radius Around Power Line	Highway
City Boundaries	Major Road
La Purísima Mission SHP	Local Road

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FIGURE 4.2-1
Jurisdicitonal Boundaries
Within the Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1 2 Miles

Scale: 1:100,000

N

4.2.3 Existing Conditions

4.2.3.1 Regulatory Background

The CPUC has primary jurisdiction over the Project by virtue of its exclusive discretionary approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over this type of utility project, such projects are exempt from local land use and zoning regulations and permitting. However, as part of the CEQA impact analysis, PG&E considered local and state land use plans and policies, and local issues.

Federal

There are no federal regulations applicable to the Project related to agricultural, land use and planning and recreation resources.

State

California Public Utilities Commission. The CPUC is charged with the regulation of certain investor-owned public utilities within the State of California, including electric transmission facilities. The CPUC regulates the terms and rates for service, equipment, practices, and facilities, as well as the issuance of stocks and bonds. As previously noted in Section 1.0, the CPUC is the Lead Agency for CEQA review for the Project and has authority for discretionary project approval. Prior to project approval, the CPUC ensures that the project under review complies with applicable state and federal regulations, and requires PG&E's compliance with local ministerial regulations to the extent feasible, in accordance with General Order No. 131-D.

Williamson Act. The California Land Conservation Act, better known as the Williamson Act, was passed in 1965 by the California Legislature to preserve agricultural and open space lands through private landowners entering into a contract to voluntarily restrict land to agricultural and open space uses. The vehicle for these agreements is a rolling term 10-year contract (i.e., unless either party files a "notice of nonrenewal" the contract is automatically renewed annually for an additional year). In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value (California Department of Conservation [DOC], 2006).

Local

As described above, although PG&E's Project is not subject to local agency regulations, PG&E has considered local plans and policies as part of its CEQA impacts analysis. The 14.1 miles of reconductoring begins 0.5 mile east of Cabrillo Substation (12th and Industrial Street, Lompoc, California 93436) and extends through the Santa Ynez Valley in unincorporated Santa Barbara County to the terminus at Santa Ynez Switching Station (1811 Jonata Park Road, Buellton, California 93427), as shown on Figure 4.2-1. Local plans and ordinances including the Santa Barbara County Comprehensive Plan, the Santa Barbara County Uniform Rules for Agricultural Preserves and Farmland Security Zones (Uniform Rules), the draft Santa Ynez Valley Community Plan, the Land Use and Development Code (LUDC), and the City of Lompoc General Plan and Municipal Code were evaluated, and are discussed in Section 4.2.3.3.

4.2.3.2 Environmental Setting

Regional

The 115 kV power line corridor is located in a predominately rural area beginning in the City of Lompoc and extending east through the Santa Rita Hills area, terminating at the Buellton Substation near US 101. The major transportation corridor through the area is SR 246, which connects SR 1 and US 101. The area is characterized by rolling hills with agriculture (including viticulture, especially for pinot noir grapes and wine) and some grazing (refer to Figure 4.2-2). Most of the corridor is classified as Non-Prime Agricultural Land under the Department of Conservation, Division of Land Resource Protection, Williamson Act Program (refer to Figure 4.2-3). A small portion within the City of Lompoc is classified as Urban and Built-up Land. Approximately one-half of the corridor is under Williamson Act Agricultural Preserve Contracts. These classifications are shown on Figure 4.2-4.

Local

Cabrillo Substation Area. The existing 115 kV power line connects to Cabrillo Substation at the eastern border of the City of Lompoc. The substation is bordered by East Laurel Avenue to the north, San Julian Road to the east, Industrial Way to the south and an industrial site to the west. The substation is designated and zoned "Industrial." The existing power line runs west along East Laurel Avenue, exits the City boundaries and then crosses the Santa Ynez River approximately 0.2 mile east of the substation.

There are two public parks within a one-mile radius of Cabrillo Substation (see Figure 4.2-5, Land Use Designations): Pioneer Park (2,343 feet) and River Park (723 feet). Pioneer Park is a neighborhood park featuring a regulation sized baseball field, spectator areas, a playground, park benches, a small pre-school building, open turfed areas, and large mature trees providing wind breaks and shade areas. River Park consists of 45 developed acres and is a linear park that lies adjacent to the Santa Ynez River on the eastern border of Lompoc.

Santa Barbara County Area. Within the County of Santa Barbara, the existing power line traverses rolling hills and valleys on land designated and zoned for agriculture. In limited locations, there are privately owned vineyards that may be affected by construction activities. As discussed in Section 4.2.4.1, Applicant Proposed Measures, PG&E will work with the vineyard owners to provide acceptable compensation, thereby mitigating any impacts. Table 4.2-1 below outlines the Assessor Parcel Numbers, acreage, general plan designation, zoning, and Agricultural Preserve Contract number (if applicable) along the portion of the power line proposed for reconductoring. There are no County parks in the general vicinity of the power line.

Santa Ynez Switching Station Area. Santa Ynez Switching Station is approximately 2 miles north of the City of Buellton on the east side of US 101. The station is designated A-II-100 (Agriculture II-100) and zoned 100-AG (100 acre parcel size—Agriculture) despite its use. The only location along the entire alignment where residences are within 0.5 mile of the power line is near Bluebird Glen Road, approximately 0.6 mile west of the switching station. The power line crosses 13 parcels located within the Bluebird Glen Road residential subdivision. Not all the lots have been developed with homes.

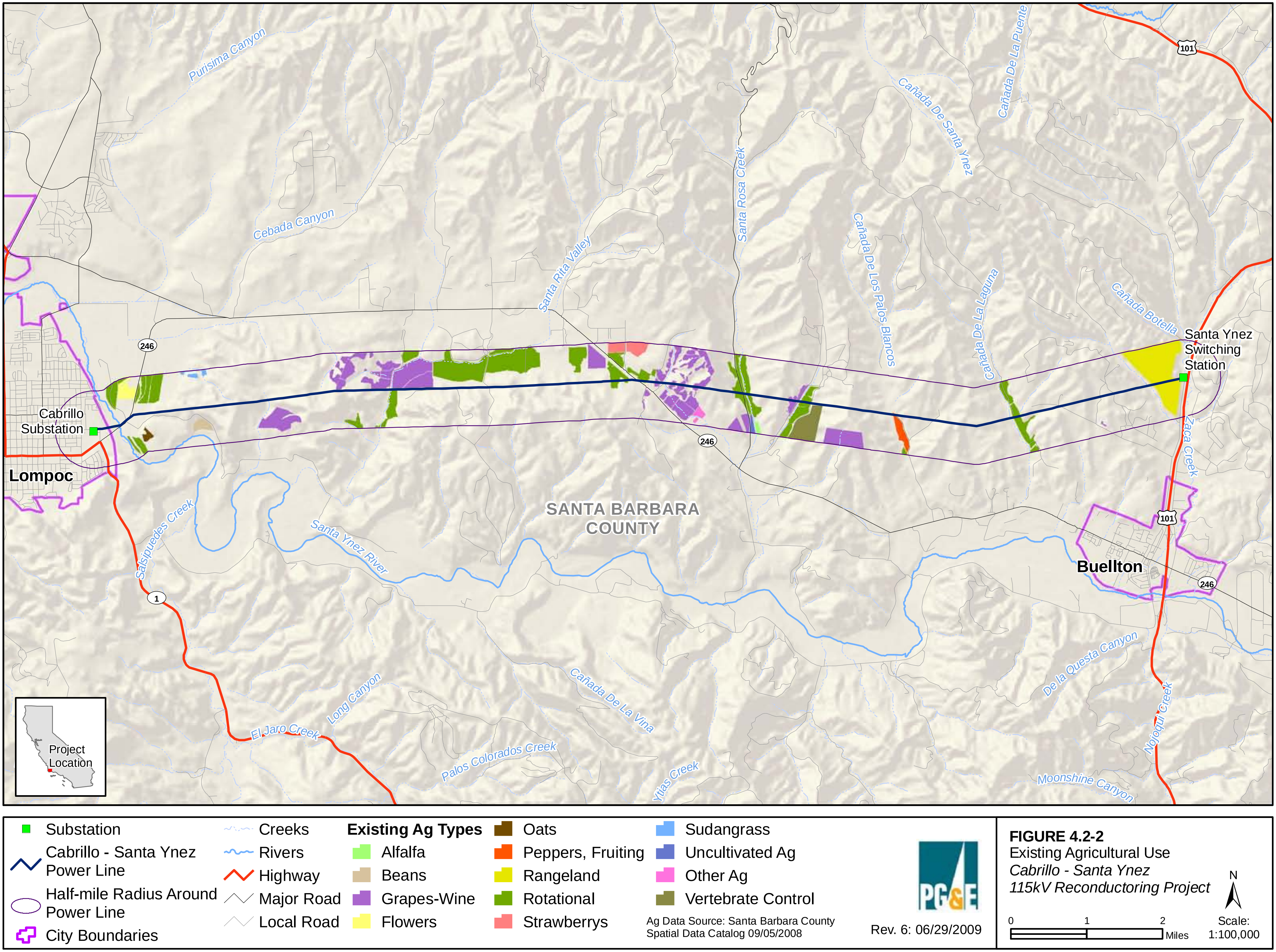
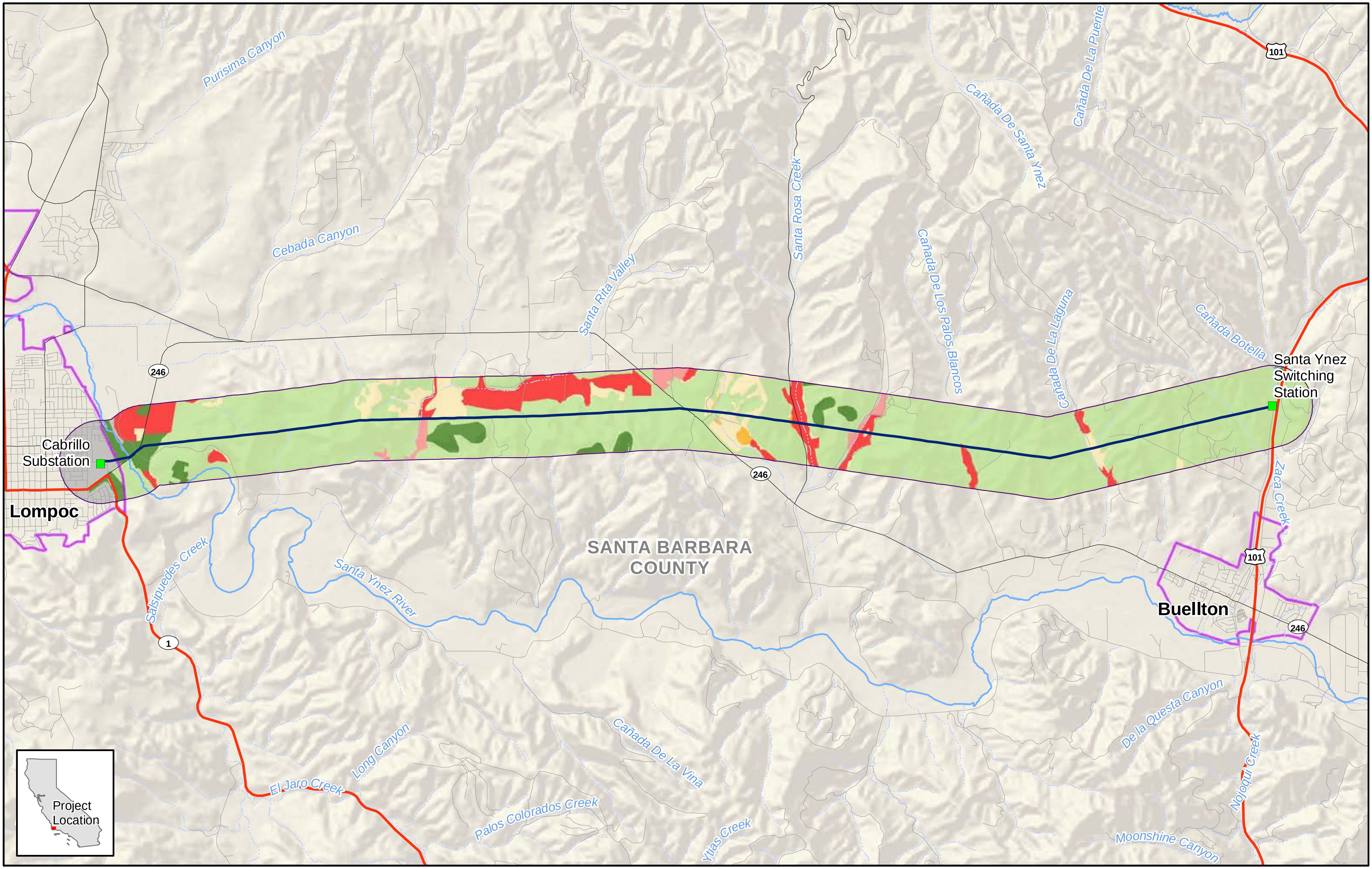


FIGURE 4.2-2
Existing Agricultural Use
Cabrillo - Santa Ynez
115kV Reconductoring Project



Substation
Cabrillo - Santa Ynez Power Line
Half-mile Radius Around Power Line
City Boundaries
Creeks
Rivers

Highway
Major Road
Local Road

CA Farmland Mapping and Monitoring Program

Prime Farmland
Farmland of Local Importance
Farmland of Statewide Importance
Unique Farmland
Grazing Land
Urban and Built Up Land
Other Land

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FIGURE 4.2-3
CDC FMMP Farmland Classification Lands Within the Project Area
Cabrillo - Santa Ynez 115kV Reconductoring Project

N

0 1 2 Miles

Scale: 1:100,000

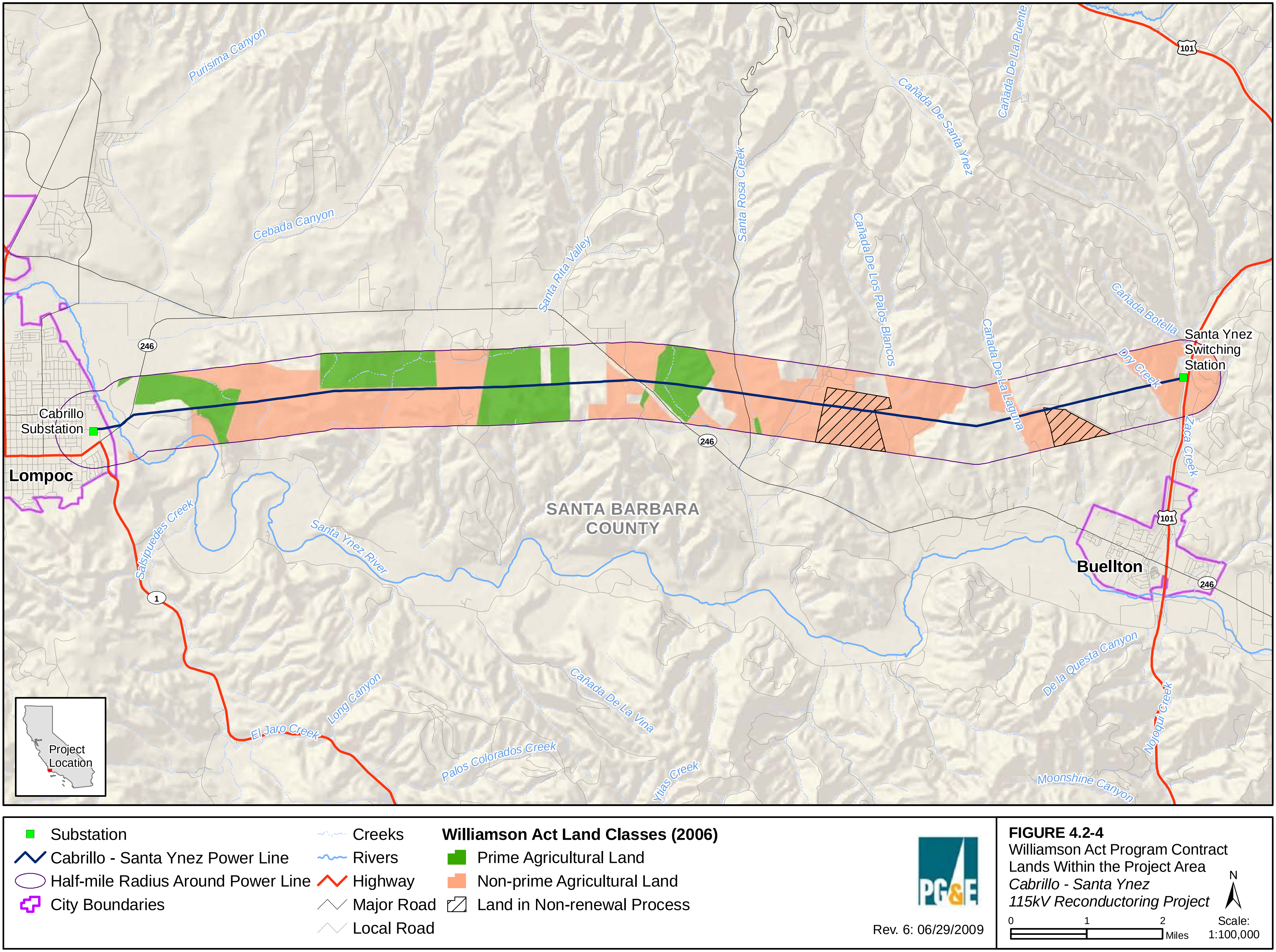


FIGURE 4.2-4
Williamson Act Program Contract Lands Within the Project Area
Cabrillo - Santa Ynez 115kV Reconductoring Project

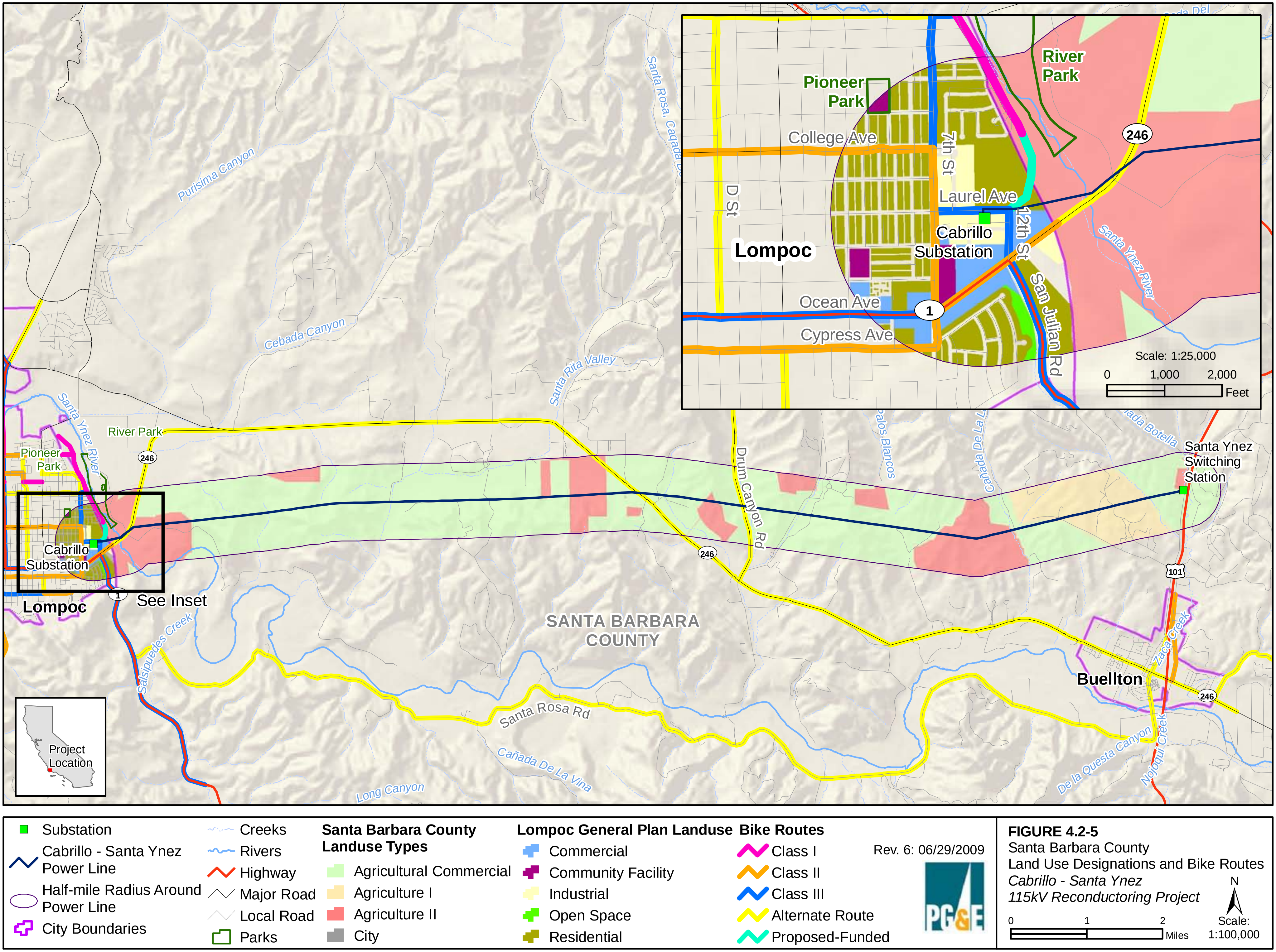


FIGURE 4.2-5
Santa Barbara County
Land Use Designations and Bike Routes
Cabrillo - Santa Ynez
115kV Reconductoring Project

TABLE 4.2-1
County of Santa Barbara Land Use and Zoning Designations
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Assessor Parcel No.	General Plan Designation	Zoning
099-141-021 (Lompoc)	I	I
099-141-006	A-II-40	40-AG
099-141-018	A-II-40	40-AG
099-141-017	A-II-40	40-AG
099-150-057	A-II-40	40-AG
099-150-054	A-II-40	40-AG
099-150-055	A-II-40	40-AG
099-420-012	A-II-40	40-AG
099-420-011	A-II-40	40-AG
099-420-010	A-II-40	40-AG
099-420-009	A-II-40	40-AG
099-150-006	AC	AG-II-100
099-150-010	AC	AG-II-100
099-150-012	AC	AG-II-100
099-150-065	AC	AG-II-100
099-160-056	AC	AG-II-100
099-160-057	AC	AG-II-100
099-160-011	A-II	100-AG
099-160-014	AC	AG-II-100
099-160-067	A-II	100-AG
099-160-095	AC	AG-II-100
099-160-094	AC	AG-II-100
099-170-043	AC	AG-II-100
099-170-013	A-II	100-AG
099-170-023	AC	AG-II-100
099-220-001	AC	AG-II-100
099-220-017	AC	AG-II-100
099-220-021	AC	AG-II-100
099-220-013	AC	AG-II-100
099-190-069	AC	AG-II-100
099-190-026	AC	AG-II-100
099-190-039	A-II-100	100-AG
099-190-077	AC	AG-II-100
099-430-052	A-I-20	AG-I-20
099-430-053	A-I-20	AG-I-20
099-430-018	A-I-20	AG-I-20
099-430-050	A-I-20	AG-I-20
099-430-049	A-I-20	AG-I-20
099-430-014	A-I-20	AG-I-20
099-430-005	A-I-20	AG-I-20
099-430-006	A-I-20	AG-I-20
099-430-010	A-I-20	AG-I-20
099-430-009	A-I-20	AG-I-20
099-430-029	A-I-20	AG-I-20
099-430-028	A-I-20	AG-I-20
099-430-027	A-I-20	AG-I-20
099-630-001	AC	AG-II-100
099-630-008	A-II-100	100-AG
099-630-009	A-II-100	100-AG

General Plan Designations. The following County of Santa Barbara and City of Lompoc general plan land use designations are present along the power line corridor and are shown on Figure 4.2-5. (All designations are from the County of Santa Barbara unless explicitly designated as City of Lompoc.)

Agricultural Commercial (AC). This designation is for commercially farmed, privately owned land located within Rural, Inner Rural, Existing Developed Rural Neighborhoods, or Urban Areas. This designation allows compatible land uses and land uses that are accessory to agricultural operations.

Agriculture I (A-I). This designation applies to prime and non-prime farm lands and agricultural uses located within Urban, Inner Rural, and Rural Neighborhood areas.

Agriculture II (A-II). This designation applies to farm land and agricultural uses located outside of Urban, Inner Rural, and Rural Neighborhood areas. General agriculture is permitted, including but not limited to livestock operations, grazing, and beef production as well as more intensive agricultural uses.

Industrial (I) (City of Lompoc)**.** This designation includes industrial areas as well as manufacturing and distribution activities which require separation from residential areas. This category permits a wide range of industrial activities including manufacturing, assembling, mechanical repair, product storage, wholesale trade, heavy commercial (e.g., lumber yards), and accessory office and services.

Zoning Districts. The following County of Santa Barbara and City of Lompoc zoning districts are present along the existing power line corridor and are shown on Figure 4.2-6. (All districts are from the County of Santa Barbara unless explicitly designated as City of Lompoc.)

- **Agriculture I (AG-I-20).** This district establishes areas for agricultural use within Urban, Inner Rural, and Existing Developed Rural Neighborhood areas, as defined on the County of Santa Barbara Comprehensive Plan maps. The intent is to provide standards to support agriculture as a viable land use and encourage maximum agricultural productivity. Land in the AG-I zone district is subject to the minimum acreage indicated by the zoning (e.g., AG-I-20 would have a 20-acre minimum parcel size).
- **Agriculture II (AG-II).** This district establishes agricultural land uses for prime and nonprime agricultural lands located outside of Urban, Inner Rural, and Rural Neighborhood areas, as shown on the Santa Barbara County Comprehensive Plan maps. The intent is to preserve these lands for long-term agricultural use. Land in the AG-II zone district is subject to the minimum acreage indicated by the zoning (e.g., AG-II-40 would have a 40-acre minimum parcel size).
- **General Agriculture (40-AG/100-AG).** This zoning district is defined under Ordinance 661, which was replaced by Article III in most portions of the County; and later by the LUDC. Some agricultural areas have retained the Ordinance 661 zoning classifications, however.
- **Industrial (I)** (City of Lompoc)**.** This zoning district is intended to provide for light industrial, manufacturing, and limited accessory uses.

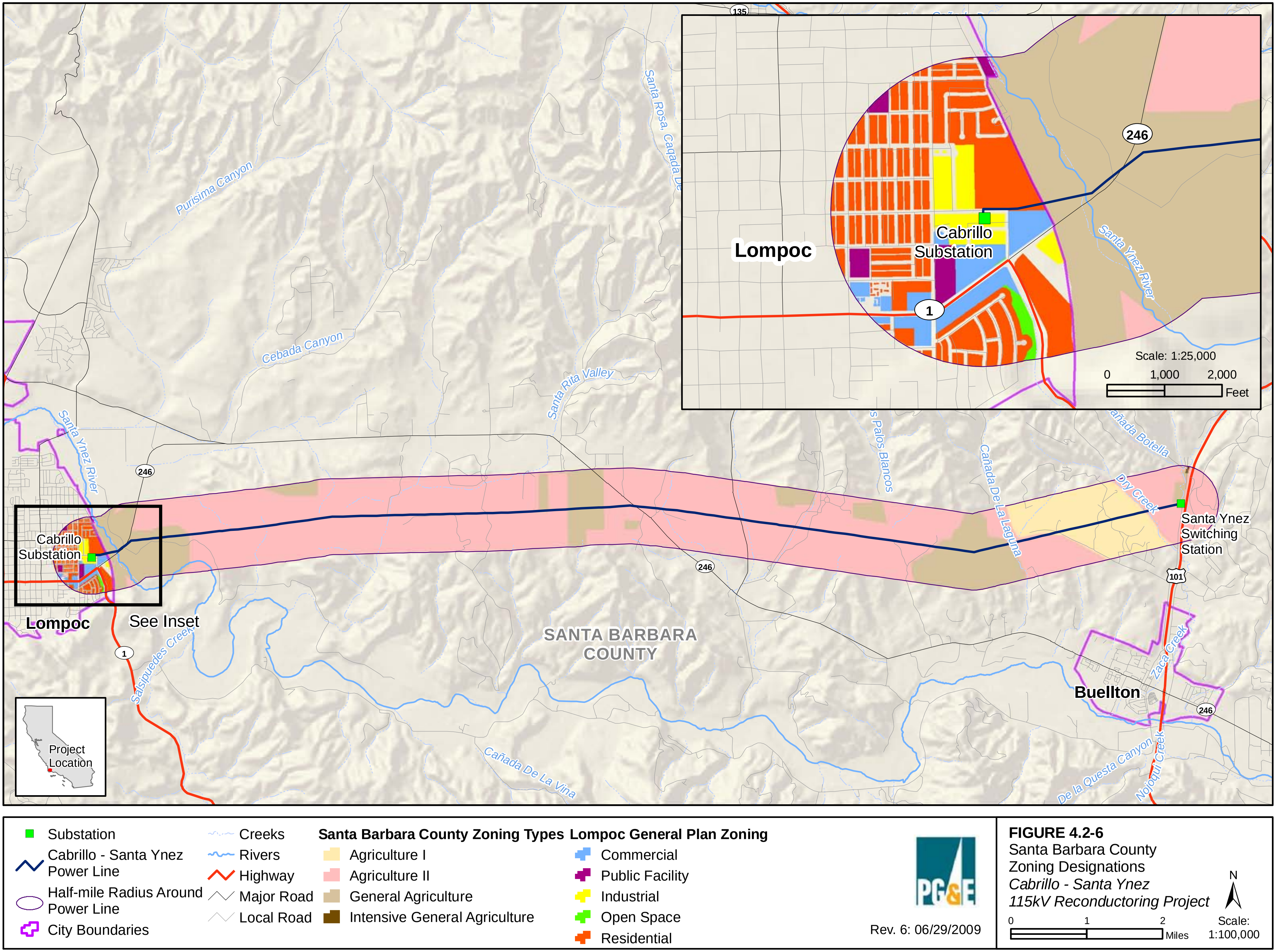


FIGURE 4.2-6
Santa Barbara County Zoning Designations
Cabrillo - Santa Ynez 115kV Reconductoring Project

Lands subject to this district are not part of the Project, and no development would occur on these lands. Land in the AG zone district is subject to the minimum acreage indicated by the zoning (e.g., 40-AG would have a 40-acre minimum parcel size).

4.2.3.3 Consistency with Plans and Policies

This section provides an analysis of Project's consistency with local plans and ordinances including the Santa Barbara County Comprehensive Plan, the Santa Barbara County Uniform Rules, the draft Santa Ynez Valley Community Plan, the LUDC, and the City of Lompoc General Plan and Municipal Code.

Santa Barbara County Comprehensive Plan

Agricultural Element. **Goal I:** *Santa Barbara County shall assure and enhance the continuation of agriculture as a major viable production industry in Santa Barbara County. Agriculture shall be encouraged. Where conditions allow, (taking into account environmental impacts) expansion and intensification shall be supported.*

Policy II.D: *Conversion of highly productive agricultural lands whether urban or rural, shall be discouraged. The County shall support programs which encourage the retention of highly productive agricultural lands.*

The Project consists of reconductoring an existing power line and replacement of 128 existing wooden poles with new light-duty steel poles. No changes are anticipated to the existing power line alignment.

The main staging areas will be approximately 200 feet by 200 feet located at Cabrillo Substation (12th and Industrial St., Lompoc, California 93436) and the Buellton Service Center yard (55 Easy Street, Buellton, California 93427), which are existing, non-agricultural facilities. The main staging area will be used for material and equipment storage, and worker reporting location and vehicle parking.

The Farmland Mapping and Monitoring Program of the State Department of Conservation maps the majority of the power line route as Grazing Land (DOC, 2004a). Most of the agricultural land that would be affected by the Project is used for cattle grazing. Given that the Project includes the reconductoring and replacement of existing facilities, the Project will not significantly impair agricultural productivity. The Project will not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a nonagricultural use.

Land Use Element - Land Use Development Policies. **Policy 4:** *Prior to issuance of a development permit, the County shall make the finding, based on information provided by environmental documents, staff analysis, and the applicant, that adequate public or private services and resources (i.e., water, sewer, roads, etc.) are available to serve the proposed development. The applicant shall assume full responsibility for costs incurred in service extensions or improvements that are required as a result of the proposed project. Lack of available public or private services or resources shall be grounds for denial of the project or reduction in the density otherwise indicated in the land use plan.*

Reconductoring an existing power line will not affect public services or resources (see Section 4.10 Population and Housing, Adequate services and resources are available. Minimal water is necessary for dust control during reconductoring construction activities. There are no long-term water needs for the power line.

Construction workers will require restroom facilities that can be accommodated through the provision of portable toilets, with the sanitary wastes disposed of offsite at licensed facilities. There are no operational needs for sanitary disposal.

Solid nonhazardous waste produced during construction will include food, glass, paper, plastic, packing materials, and scrap wood. On average, approximately 2 cubic yards of food, glass, paper, plastic, packing materials, and scrap wood will be generated each month during construction. Once the reconductoring Project is complete, no waste will result. Landfill capacity will not be exceeded, and all construction waste materials will be disposed of in accordance with applicable regulatory requirements (see also Section 4.7, Hazards and Hazardous Materials).

Storm drainage facilities are not required for the reconductoring of the existing power line.

Access to the Project area is generally available from public roads and along existing PG&E maintenance roads. Some existing access roads will be reestablished for vehicle use through vegetation management and minimal grading. Please refer to Section 2.0 for more information.

Hillside and Watershed Protection, Policy 2: *All developments shall be designed to fit the site topography, soils, geology, hydrology, and any other existing conditions and be oriented so that grading and other site preparation is kept to an absolute minimum. Natural features, landforms, and native vegetation, such as trees, shall be preserved to the maximum extent feasible. Areas of the site which are not suited to development because of known soil, geologic, flood, erosion, or other hazards shall remain in open space.*

The Project includes minimal ground disturbance due to pole replacement and construction equipment access. Applicant proposed measures included in the Geology & Soils section adequately address construction-related impacts. No long-term operational impacts are anticipated.

Land Use Element/Community Goals Applicable to the Lompoc Area. **Land Use:** *Changes in natural or re-established topography, vegetation, or biological communities should be minimized in an attempt to avoid the destruction of natural habitats.*

The Project will replace existing facilities; there are no new components or expanded facilities. Staging areas are located within existing fenced facilities. Applicant proposed measures have been identified in Section 4.4, Biological Resources, which will minimize impacts to biological resources to the maximum extent feasible.

Environment: *The County should plan for and encourage the maximum conservation of energy.*

The Project will reconductor an existing power line, thereby providing improved power line reliability. Higher efficiency results in higher conservation of energy.

Uniform Rules for Agricultural Preserves and Farmland Security Zones. Rule 2: *The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.*

As discussed in the Agricultural Element section above, the Project includes reconductoring an existing power line and replacement of 128 existing wooden poles with new light-duty steel poles. The area of disturbance around each pole will be temporary and minimal. The power line crosses land within Agricultural Preserve contracts; however, most of the agricultural land that will be affected by the Project is used for cattle grazing (DOC, 2004b). Given that the Project includes the reconductoring and replacement of existing facilities, the Project will not significantly impair agricultural productivity on lands within Agricultural Preserves.

Santa Ynez Community Plan

GOAL PRT-SYV: *Protect and Provide Public Recreational Opportunities for Residents and Visitors, Including an Expanded Trail Network and Parks, consistent with the goals and policies of the County Agricultural Element to the Comprehensive Plan.*

There are two parks within one mile of Cabrillo Substation. However, Project facilities will not encroach upon the parks nor will construction traffic or equipment significantly impact local roadways near these parks. The land that the power lines crosses is privately owned. The Project will not impact recreational opportunities.

County of Santa Barbara Land Use and Development Code

Agriculture I (AG-I): *The AG-I zone is applied to areas appropriate for agricultural use within Urban, Inner Rural, Rural (Coastal Zone only), and Existing Developed Rural Neighborhood areas, as defined on the Comprehensive Plan maps. The intent is to provide standards that will support agriculture as a viable land use and encourage maximum agricultural productivity.*

Agricultural II (AG-II): *The AG-II zone is applied to areas appropriate for agricultural land uses on prime and non-prime agricultural lands located within the Rural Area as shown on the Comprehensive Plan maps. The* intent *is to preserve these lands for long-term agricultural use.*

As discussed in the Agricultural Element section above, the Project will not significantly impact agricultural resources. Electrical facilities are consistent with agricultural zone districts.

City of Lompoc General Plan and Municipal Code

Goal 4: *Maintain high-quality public facilities and services.*

Land Use Section, Policy 5.2: T*he City shall protect prime agricultural land east of the City and west of Bailey Avenue.*

Only Cabrillo Substation and the initial 0.5 mile of the existing Cabrillo line fall within the City of Lompoc, in an area zoned for industrial uses. Cabrillo Substation in Lompoc will be used for material and equipment storage, a reporting location for workers, and worker and Project vehicle parking. These activities are similar to ongoing operations and maintenance activities. Project-related activities are consistent with the provisions of the Lompoc Municipal Code.

4.2.4 Potential Impacts and Mitigation

The following section describes significance criteria for agricultural, land use, and recreational impacts derived from the CEQA Checklist, applicant proposed measure, and potential Project-related construction and operational impacts.

4.2.4.1 Significance Criteria

Significance criteria for agricultural, land use, and recreational impacts were derived from the CEQA Checklist. Criteria without anticipated impacts are discussed briefly in the following list. The criterion with an anticipated less than significant impact is discussed in Section 4.2.4.3, Construction/Temporary Impacts.

Would the Project:

II.a) Convert land designated as prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use? No impact will occur; no mitigation is needed.

The Project will not convert farmland to nonagricultural use; therefore, no impact will occur.

II.b) Conflict with existing zoning for agricultural use or Williamson Act contract? No impact will occur; no mitigation is needed.

The Project type is a considered a compatible use and will not conflict with existing zoning; therefore, no impact will occur.

II.c) Change the environment resulting in conversion of designated farmland to nonagricultural use? With implementation of APM LU-1, a less than significant temporary impact will occur.

The Project will replace poles resulting in no permanent conversion of farmland to nonagricultural use; therefore, a less than significant temporary impact will occur. This potential impact is discussed in Section 4.2.4.3, Construction.

II.d) Create physical division of an established community? No impact will occur; no mitigation is needed.

The existing power line does not divide an established community and Project activities will not change this situation; therefore, there are no impacts expected.

IX.a) Conflict with applicable land use plans, policies, or regulation of an agency with jurisdiction over the project? No impact will occur; no mitigation is needed.

The Project will not conflict with applicable land use plans, policies, or regulation of an agency with jurisdiction over the Project; therefore, no impact will occur.

IX.b) Conflict with an applicable habitat conservation plan (HCP) or natural community conservation plan (NCCP)? No impact will occur; no mitigation is needed.

A Regional Conservation Strategy was initiated in Santa Barbara County March 28, 2006 and was discontinued March 25, 2008 due to financial constraints required to develop and implement the strategy. There are no existing habitat conservation plans or natural community conservation plans in the Project area; therefore, no impact will occur.

XIV.a) Create an increase in the use of existing parks or other recreational facilities? No impact will occur; no mitigation is needed.

The Project will occur in an agricultural area with limited existing parks or other recreational facilities. There will be no increase in park or other recreational facilities usage associated with the reconductoring of the power line; therefore, no impacts are anticipated.

XIV.b) Create construction or expansion of recreational facilities that might have an adverse physical effect on the environment? No impact will occur; no mitigation is needed.

The Project will occur in an agricultural area with limited recreational facilities. There will be no increase or new demand for park usage associated with the reconductoring of the power line; therefore, no impacts are anticipated.

4.2.4.2 Applicant Proposed Measures

PG&E will implement the following APM to minimize construction-related land use impacts to agriculture:

APM LU-1: Agriculture impacts avoidance. To avoid potential impacts to agriculture, PG&E will work with farmers and ranchers to conduct work between their harvest and planting periods where and whenever possible. In areas containing permanent crops (i.e., grape vines, tree orchard, etc.) that must be removed and replaced to gain access to poles sites for construction purposes, PG&E will provide compensation to landowners for crop loss and other reasonable and associated costs as soon as practicable after completion of construction. Access across active crop areas will be negotiated with the owners in advance of any construction activities.

4.2.4.3 Construction

Potential Impact LU-1: Change the environment resulting in conversion of designated farmland to nonagricultural use. A less than significant impact will result. The Project involves reconductoring an existing power line and replacement of existing power poles. Agricultural uses, primarily vineyards, and grazing currently occur in the vicinity of the existing power line.

Short-term construction impacts may occur within the 40- by-100-foot construction area near the power poles. Construction disturbance will be temporary. Due to the large amount of land available for grazing and agriculture in Santa Barbara County as well as the commitment of PG&E to implement APM LU-1, there will be no conversion of designated farmland. Farmland can continue to be farmed or used for ranching purposes around and between new power poles as is currently the case with the existing power line. This impact will be less than significant.

4.2.4.4 Operation and Maintenance

Operation and maintenance activities are not expected to change with implementation of the Project; therefore, no temporary or permanent operation and maintenance impacts are anticipated.

4.2.5 Works Cited

California Department of Conservation (DOC). 2004a. *Farmland Mapping and Monitoring Program*.

________. 2004b. *Williamson Act Contract Lands*.

________. 2006. *Williamson Act, Questions & Answers*.

City of Lompoc. 1997. *City of Lompoc General Plan*. Amended 2005.

________. 2007. Zoning Ordinance, Chapter 50. July.

Google, Inc. 2005. *Google Earth.* http://earth.google.com/.

Santa Barbara County. 1979a. *Santa Barbara County Comprehensive Plan*.

________. 1979b. Open Space Element, *Santa Barbara County Comprehensive Plan*. May.

________. 1980. Land Use Element, Circulation Element, Environmental Resource Management Element, *Santa Barbara County Comprehensive Plan*. December.

________. 1991. Agricultural Element, *Santa Barbara County Comprehensive Plan*. September.

________. 1994. Circulation Element, *Santa Barbara County Comprehensive Plan*.

________. 1986. Noise Element, *Santa Barbara County Comprehensive Plan*.

________. 2006. *Draft Santa Ynez Valley Community Plan*. September.

________. 2007. *Uniform Rules for Agricultural Preserves and Farmland Security Zones*. September.

________. 2008a. *Environmental Thresholds and Guidelines Manual*. October.

________. 2008b. *Land Use and Development Code*. August.

________. 2009. "Permit History By Parcel." Available online at: http://sbcountyplanning.org/permitting/reports/LIXPandD/parcelsearch.cfm.

4.3 Air Quality

4.3.1 Introduction

This section discusses the regulatory setting, environmental setting, potential air quality impacts, and potential greenhouse gas (GHG) emissions of the Project. Short-term emissions from construction of the Project will result in a less than significant impact to air quality and GHG emissions. Maintenance or repair activities associated with operation of the Project will be similar to current activities. Operation of the Project will not increase emissions compared to existing conditions, thereby resulting in no impact to air quality. The following air quality significance criteria derived from the CEQA Checklist summarize the significance of the potential impacts to air quality. The GHG significance criteria summarize the significance of the potential impacts from greenhouse gas emissions (California Office of Planning and Research, 2009).

III. AIR QUALITY— Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
GREENHOUSE GAS EMISSIONS —Would the Project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Note: The greenhouse gas checklist questions are based on proposed amendments to the CEQA Guidelines (California Office of Planning and Research, 2009) and are subject to change. It the amendments are approved, the questions would become section VII and all following sections would be renumbered.

4.3.2 Methodology

4.3.2.1 Air Quality

Air quality impacts were evaluated following the Santa Barbara County Air Pollution Control District (SBCAPCD) guidance document *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD, 2008). Short-term construction emissions of carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter (defined as particulate matter less than 10 microns in aerodynamic diameter [PM_{10}]), and fine particulate matter (defined as particulate matter less than 2.5 microns in aerodynamic diameter [$PM_{2.5}$])were evaluated. Detailed construction emission calculations are presented in Appendix A. Since ozone is formed through chemical reactions in the atmosphere, the ozone precursors, oxides of nitrogen (NO_x) and reactive organic compounds (ROCs) were used to evaluate the potential for ozone impacts from construction. Construction emissions were estimated using construction equipment emission factors from URBEMIS2007 (version 9.2.4) and truck emission factors from EMFAC2007 (version 2.3). Exhaust emissions from helicopters that may be used were estimated using emission factors from the Federal Aviation Association, Emissions and Dispersions Modeling System. PM_{10} emissions from soil disturbance were quantified using the grading emission factor in URBEMIS2007 (version 9.2.4). Paved and unpaved road emissions were estimated using *AP-4* (United States Environmental Protection Agency [USEPA], 2006).

4.3.2.2 Greenhouse Gas

Short-term construction emissions of carbon dioxide (CO_2) were evaluated.[1] Detailed construction emission calculations are presented in Appendix A. Construction emissions were estimated using construction equipment emission factors from URBEMIS2007 (version 9.2.4) and truck emission factors from EMFAC2007 (version 2.3).

4.3.3 Existing Conditions

4.3.3.1 Regulatory Background

Federal

Air Quality

The federal Clean Air Act (CAA) establishes the statutory framework for regulation of air quality in the United States. Pursuant to this act, the USEPA has established various regulations to achieve and maintain acceptable air quality, including the adoption of National Ambient Air Quality Standards (NAAQS), mandatory State Implementation Plan (SIP) or maintenance plan requirements to achieve and maintain the NAAQS, and emission standards for both stationary and mobile sources of air pollution. NAAQS have been established for the following air pollutants (called "criteria" pollutants): CO, ozone, nitrogen dioxide (NO_2), SO_2, PM_{10}, $PM_{2.5}$, and lead. The NAAQS represent levels established by USEPA to avoid specific adverse health and welfare effects associated with each pollutant with a margin of safety. Table 4.3-1 summarizes the ambient air quality standards.

[1] The Project is not expected to result in emissions of methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride GHGs.

TABLE 4.3-1
Ambient Air Quality Standards
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Pollutant	Averaging Time	CAAQS	NAAQS[b]	
			Primary [c]	Secondary [d]
Ozone	8 hours	0.070 ppm	0.075 ppm	0.08 ppm
	1 hour	0.09 ppm	—	—
PM_{10}	Annual Arithmetic Mean	20 μg/m^3	—	—
	24 hours	50 μg/m^3	150 μg/m^3	150 μg/m^3
$PM_{2.5}$	Annual Arithmetic Mean	12 μg/m^3	15 μg/m^3	15 μg/m^3
	24 hours	35 μg/m^3	35 μg/m^3	35 μg/m^3
CO	8 hours	9.0 ppm	9 ppm	—
	1 hour	20 ppm	35 ppm	—
NO_2	Annual Arithmetic Mean	0.03 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	—	—
SO_2	Annual Arithmetic Mean	—	0.03 ppm	—
	24 hours	0.04 ppm	0.14 ppm	—
	3 hours	—	—	0.5 ppm
	1 hour	0.25 ppm	—	—
Lead[e]	Calendar Quarter	—	1.5 μg/m^3	1.5 μg/m^3
	Rolling 3-month Average	—	0.15 μg/m^3	—
	30-day Average	1.5 μg/m^3	—	—
Visibility-reducing Particles	8 hours	[f]	—	—
Sulfates	24 hours	25 μg/m^3	—	—
Hydrogen Sulfide	1 hour	0.03 ppm	—	—
Vinyl Chloride[e]	24 hours	0.01 ppm	—	—

Notes:

μg/m^3 = micrograms per cubic meter.
ppm = parts per million (by volume).

[a] California standards for ozone, CO (except Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2, and suspended particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b] National standards other than ozone, particulate matter, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

[c] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e] The California Air Resources Board (CARB) has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. CARB made this determination following the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: CARB, 2009a.

The USEPA has designated counties in California as either in "attainment" or "nonattainment" for each NAAQS. A region that is meeting the air quality standard for a given pollutant is designated as being in attainment for that pollutant. If the region is not meeting the air quality standard, then it is designated as being in nonattainment for that pollutant. If a region is designated as nonattainment for a NAAQS, the CAA requires the state to develop a SIP to demonstrate how the standard will be attained, including the establishment of specific requirements for review and approval of new or modified stationary sources of air pollution. Table 4.3-2 presents the federal attainment status for Santa Barbara County.

TABLE 4.3-2
Federal and California Air Quality Attainment Status for Santa Barbara County
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Pollutant	Averaging Period	Federal Status	California Status
Ozone	8 hours	Attainment	Nonattainment
	1 hour	—	Attainment[a]
CO	8 hours	Attainment	Attainment
	1 hour	Attainment	Attainment
NO_2	1 hour	Attainment	Attainment
	Annual Arithmetic Mean	Attainment	—[b]
SO_2	24 hours	Attainment	Attainment
	1 hour	—	Attainment
	Annual Arithmetic Mean	Attainment	—
PM_{10}	24 hours	Attainment	Nonattainment
	Annual Arithmetic Mean	—	Nonattainment
$PM_{2.5}$	24 hours	Unclassified[c]	Unclassified
	Annual Arithmetic Mean	Unclassified	Unclassified

Notes:

[a] According to the *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD, 2008), Santa Barbara County is in attainment of the state 1-hour ozone standard.

[b] Attainment status designations have not been made for the new California annual standard established in February 2007.

[c] Based on the December 22, 2008 designations released by the USEPA.

Source: CARB, 2009b and USEPA, 2009.

Greenhouse Gas

On April 10, 2009, the USEPA published a proposed Mandatory Reporting Rule in the federal Register. In general, the USEPA proposes that suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions submit annual reports to the USEPA. The comment period for the rule ended on June 9, 2009 and the USEPA is currently developing the final rule.

In addition, the Supreme Court decision in Massachusetts v. EPA (Supreme Court Case 05-1120) found that the USEPA has the authority to list greenhouse gases as pollutants and to regulate emissions of greenhouse gases under the Clean Air Act. On April 17, 2009, the USEPA found that CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions, however, to date, the USEPA has not proposed regulations based on this finding.

State

Air Quality

The California Air Resources Board (CARB) is the state agency responsible for California air quality management, including establishment of California Ambient Air Quality Standards (CAAQS), mobile source emission standards, greenhouse gas (GHG) regulations, and oversight of local air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution. The CAAQS are generally more stringent and include more pollutants than the NAAQS. Similar to USEPA, CARB designates counties in California as in attainment or nonattainment for the CAAQS. Table 4.3-2 presents the state attainment status for Santa Barbara County.

The California Clean Air Act requires each local air district in the state to prepare an air quality plan (part of the SIP) to achieve compliance with CAAQS. The CARB has ultimate responsibility for the SIP for nonattainment pollutants but relies on each local air district to adopt mandatory statewide programs and provide tailored additional strategies for sources under their local jurisdiction. The CARB combines its data with local district data and submits the completed SIP to the USEPA. The SIP consists of the emissions standards for vehicular sources and consumer products set by the CARB, as well as attainment plans adopted by the air districts and approved by the CARB.

Greenhouse Gas

In 2006, the California State Legislature signed the Global Warming Solutions Act of 2006 or AB 32, which provides the framework for regulating GHG emissions in California under AB 32. This law requires CARB to design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons carbon dioxide equivalent (CO_2e) (CARB, 2007a). Carbon dioxide emissions account for approximately 90 percent of the statewide GHG emissions (CARB, 2007a). Methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride emissions account for the remainder of the statewide GHG emissions (CARB, 2007a).

Senate Bill 97 was signed into law in August 2007. The Senate Bill requires the Office of Planning and Research to prepare, develop, and transmit to the Resource Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions by July 1, 2009. The Resource Agency would be required to certify and adopt those guidelines by January 10, 2010. Recently, the Office of Planning and Research submitted proposed amendments to the CEQA Guidelines on April 13, 2009.

Regional and Local

Air Quality

The Project is located within the jurisdiction of the SBCAPCD. The SBCAPCD is the local agency charged with preparing, adopting, and implementing stationary and area air emission control measures and standards. Under the California CAA, the SBCAPCD is required to develop an air quality plan for nonattainment criteria pollutants within the air district. The 2007 Clean Air Plan (CAP) addresses both federal and state requirements (SBCAPCD, 2007). The 2007 CAP demonstrates maintenance of the federal 8-hour standard and attainment of the state 1-hour standard for ozone.

SBCAPCD has not adopted any source-specific regulations for temporary construction emissions, such as those that could occur from the Project, beyond general dust control requirements for discretionary construction activities identified in SBCAPCD plans. Since the Project will not involve the introduction of new stationary air pollution sources, the Project does not require preconstruction permits from SBCAPCD.

Although PG&E's utility projects are not subject to local air quality regulations, the County of Santa Barbara also contributes to improving air quality through land-use planning and developing guidance documents, such as the Air Quality Supplement to the Land Use Element of the *Santa Barbara County Comprehensive Plan* (Santa Barbara County, 1981) and *Environmental Thresholds and Guidelines Manual* (Santa Barbara County, 2008).

Greenhouse Gas

Greenhouse gas emissions are not currently regulated at the regional or local level. Although they would not be applicable to PG&E's utility projects, the SBAPCD is currently developing capabilities to inventory GHGs in the County and is working to develop GHG thresholds for review of CEQA documents.

4.3.3.2 Environmental Setting

Climate and Meteorology

Santa Barbara County's air quality is influenced by both local topography and meteorological conditions. Surface- and upper-level wind flow varies both seasonally and geographically in Santa Barbara County, and inversion conditions common to the area can affect the vertical mixing and dispersion of pollutants. The prevailing wind flow patterns in Santa Barbara County are not necessarily those that cause high ozone values. High ozone values are often associated with atypical wind flow patterns.

Semipermanent high pressure lies off the Pacific Coast, which leads to limited rainfall (around 18 inches per year), with warm, dry summers and relatively damp winters. Maximum summer temperatures average about 70ºF near the coast and in the high 80ºF to 90ºF inland. During winter, average minimum temperatures range from the 40ºF along the coast to the 30ºF inland. Additionally, cool, humid, marine air causes frequent fog and low clouds along the coast, generally during the night and morning hours in the late spring and early summer. The fog and low clouds can persist for several days until broken up by a change in the weather pattern. A complete summary of the meteorological and topographical influences that are important to air quality in Santa Barbara County is available in the 2007 CAP (SBCAPCD, 2007).

Ambient Air Quality

The primary pollutants of concern in Santa Barbara County are ozone and PM_{10} because the County is designated nonattainment by CARB for the state standards. Ozone is not directly emitted but is formed in the atmosphere by complex chemical reactions of various precursors, reactive organic gases, and NOx in the presence of sunlight. The major onshore sources of ozone precursor emissions in Santa Barbara County are motor vehicles, the petroleum industry, and solvent usage (paints, consumer products, and certain industrial processes) (SBCAPCD, 2008). Sources of PM_{10} include mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust (SBCAPCD, 2008). Additional information on ozone and other pollutants of concern is provided in the 2007 CAP (SBCAPCD, 2007).

The SBCAPCD operates a network of ambient air quality monitoring stations that measure concentrations of ozone, PM_{10}, CO, NO_2, SO_2, and $PM_{2.5}$. To determine the existing ambient air quality for the Project, the nearest monitoring stations were identified. The nearest monitoring station is located in Lompoc, California on South H Street (monitor name: Lompoc-S H Street). Table 4.3-3 presents concentrations of the nonattainment pollutants, ozone and PM_{10}, measured at Lompoc-S H Street Station. Concentrations of CO, NO_2, SO_2, and $PM_{2.5}$ have not exceeded a federal or state standard in the past 3 years. As shown in Table 4.3-3, measured PM_{10} concentrations have not exceeded the federal or state standards in the past 3 years. The measured 8-hour ozone concentrations exceeded the state standard once in the past 3 years; however, the 1-hour ozone concentrations have not exceeded the state standard in the past 3 years.

TABLE 4.3-3
Summary of Maximum Ambient Air Monitoring Data in the Project Area (Lompoc-South H Street)
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Pollutant	Averaging Time	2006	2007	2008
Ozone (ppm)	1 Hour	0.056	0.078	0.082
	8 Hour	0.054	0.064	**0.074**
PM10 (µg/m^3)	24 Hour	48.6	39.6	49.3
	Annual Arithmetic Mean	17.9	20.4	*

Notes:
Hydrogen sulfide, vinyl chloride, and visibility-reducing particles are not monitored in Santa Barbara County.
ppm = parts per million.
µg/m^3 = micrograms per cubic meter.
Bold text indicates figure exceeds standards.
* There were insufficient (or no) data to determine the value.
Source: CARB, 2009c.
The Lompoc-South H Street monitoring station is located at 128 South H Street, Lompoc, California.

Toxic Air Contaminants

Toxic air contaminants are air pollutants that may cause adverse health effects, particularly cancer or reproductive harm (SBCAPCD, 2008). The Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) was enacted in September 1987. The Act requires that toxic air emissions from stationary sources (facilities) be quantified and compiled into an inventory; that risk assessments be conducted according to methods developed by the Office of Environmental Health Hazard Assessment; and that the public be notified of significant risks posed by nearby facilities. Since the amendment of the statute in 1992 by enactment of Senate Bill (SB) 1731, facilities that pose a potentially significant health risk to the public are required to reduce their risks (CARB, 2007b). The Project is not a stationary source subject to AB 2588 requirements. In addition, the Project will not emit toxic air contaminants at levels that could be considered significant under the AB 2588 program; therefore, air toxics emissions from the Project are considered insignificant.

Greenhouse Gases

GHGs are global pollutants unlike criteria air pollutants or toxic air contaminants that are pollutants of regional and/or local concern. Scientific research to date indicates that observed climate change is most likely a result of increased GHG emissions associated with human activity (IPCC, 2007). Global climate change describes a collection of phenomena, such as increasing temperatures and rising sea levels, occurring across the globe due to increasing anthropogenic emissions of greenhouse gases (USEPA, 2009). GHGs contribute to climate change by allowing ultraviolet radiation to enter the atmosphere and warm the Earth's surface, but also prevent some infrared radiation from the Earth from escaping back into space. The largest anthropogenic source of GHGs is the combustion of fossil fuels, which result primarily in emissions of CO_2.

In California, the main sources of GHG emissions are the transportation and energy sectors. The potential effects of future climate change on California resources include (CCCP, 2009):

- Increased winter runoff and reduced spring runoff which leads to winter precipitation that is not stored in the snowpack and must be managed at or downstream of major reservoirs.
- Higher temperatures and reduced snowmelt would compound the problem of providing suitable cold water habitat for salmon species.
- Sea level rise would affect the Sacramento-San Joaquin River Delta, worsening existing levee problems; cause more saltwater intrusion; and adversely affect many coastal marshes and wildlife reserves.
- Increasing temperature would increase the agricultural demand for water and increase the level of stress on native vegetation, potentially allowing for an increase in pest and insect epidemics and a higher frequency of large, damaging wildfires.

Sensitive Receptors

A sensitive receptor is a location where human populations—especially children, seniors, or sick persons—are found, and there is reasonable expectation of continuous human exposure based on the averaging period for the pollutant (Yolo-Solano Air Quality Management District, 2007). Sensitive receptors are facilities such as hospitals, schools, convalescent facilities, or residential areas. The sensitive receptors located within 1 mile of the Project are found in Figure 4.3-1, Sensitive Receptors.

Odors

The Project will involve the temporary use of vehicles and construction equipment that do not generate significant odors; therefore, odor impacts are considered to be insignificant.

4.3.4 Potential Impacts and Mitigation

The following section describes significance criteria for air quality impacts derived from the CEQA Checklist, APMs, and potential Project-related construction and operational impacts.

4.3.4.1 Significance Criteria

The significance criteria from the CEQA Checklist, including currently-proposed GHG criteria, were used to evaluate impacts. Criteria without anticipated impacts are discussed briefly in

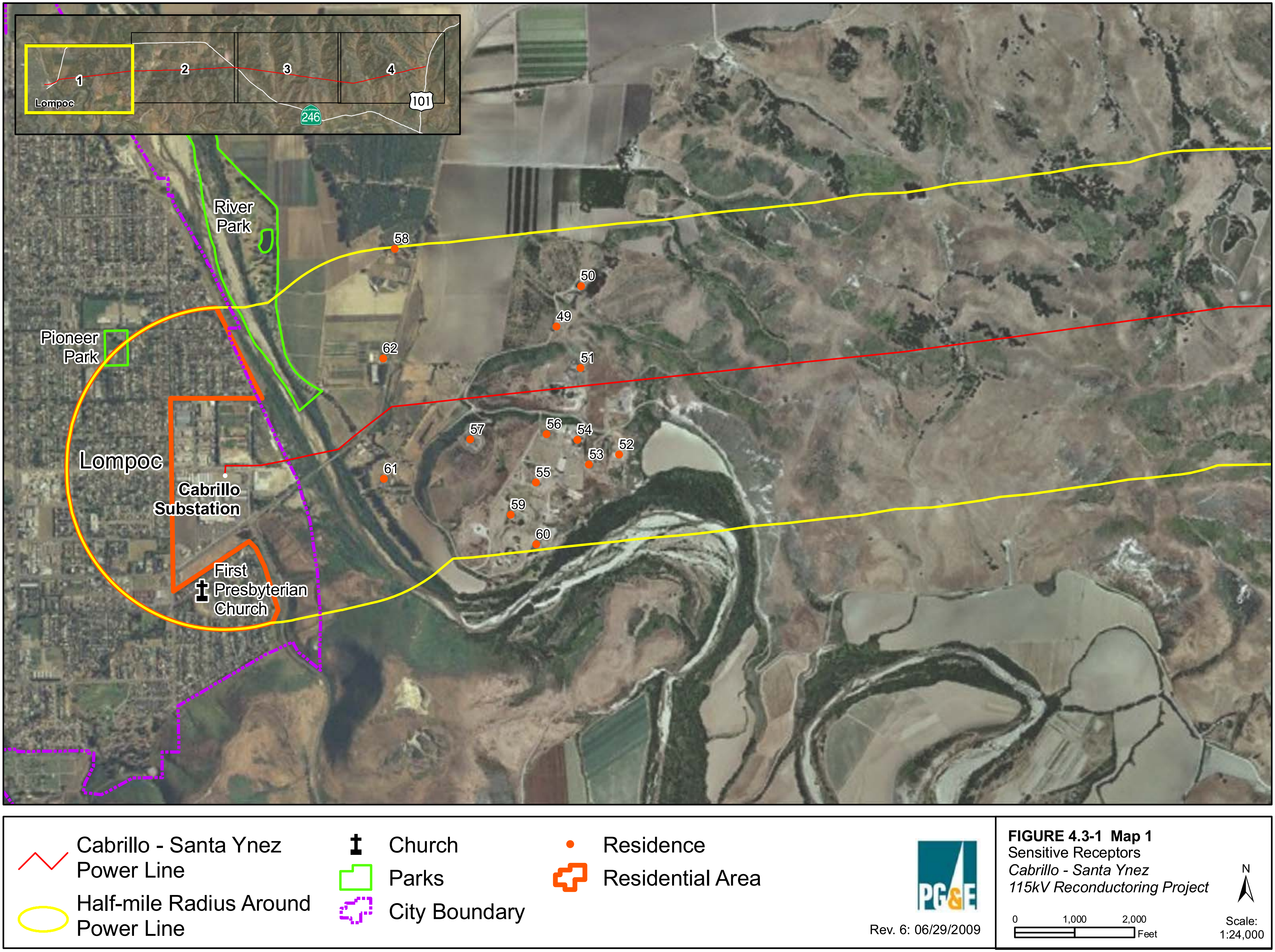
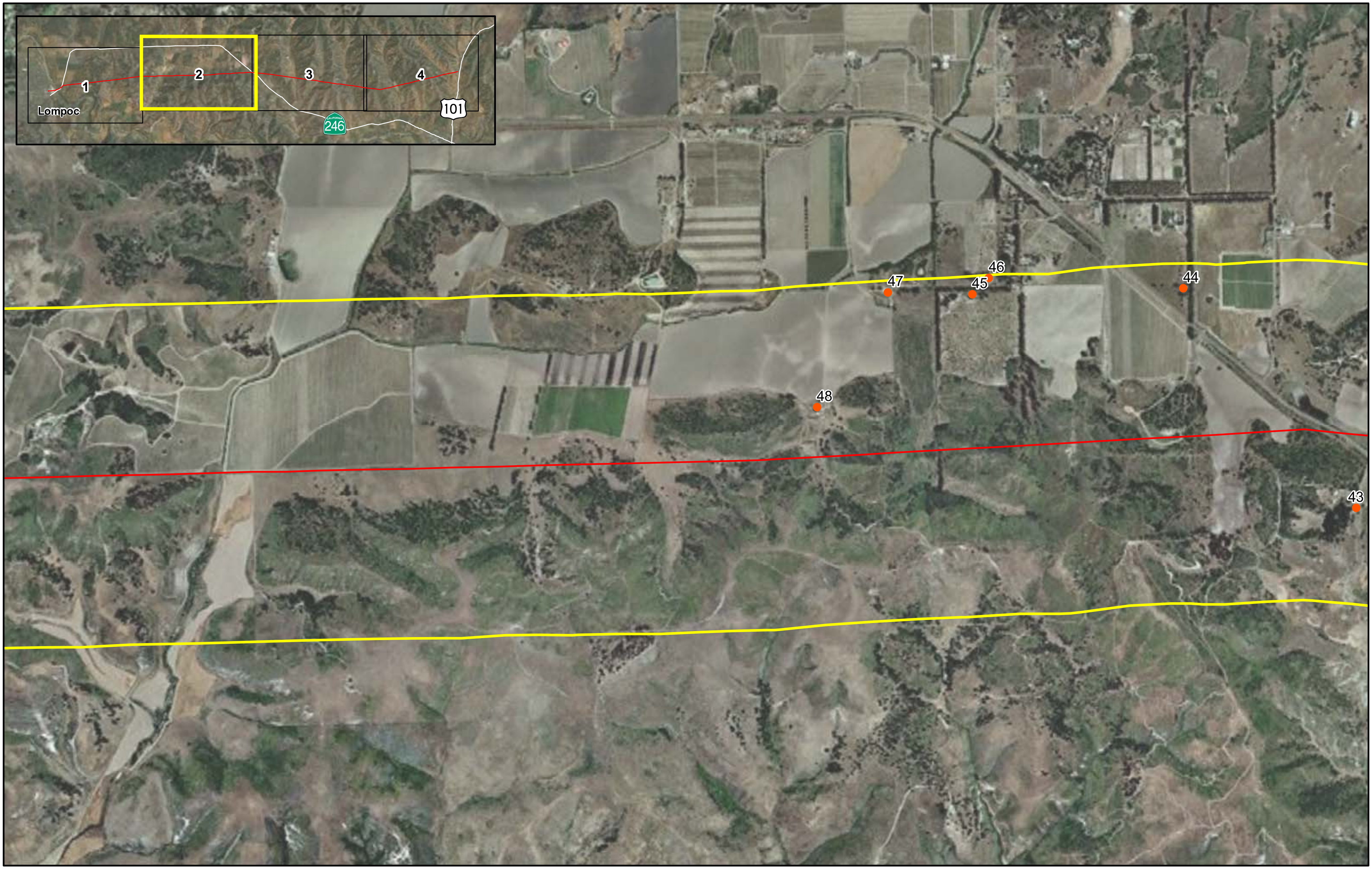


FIGURE 4.3-1 Map 1
Sensitive Receptors
Cabrillo - Santa Ynez
115kV Reconductoring Project



Cabrillo - Santa Ynez Power Line
Half-mile Radius Around Power Line
Church
Parks
City Boundary
Residence
Residential Area

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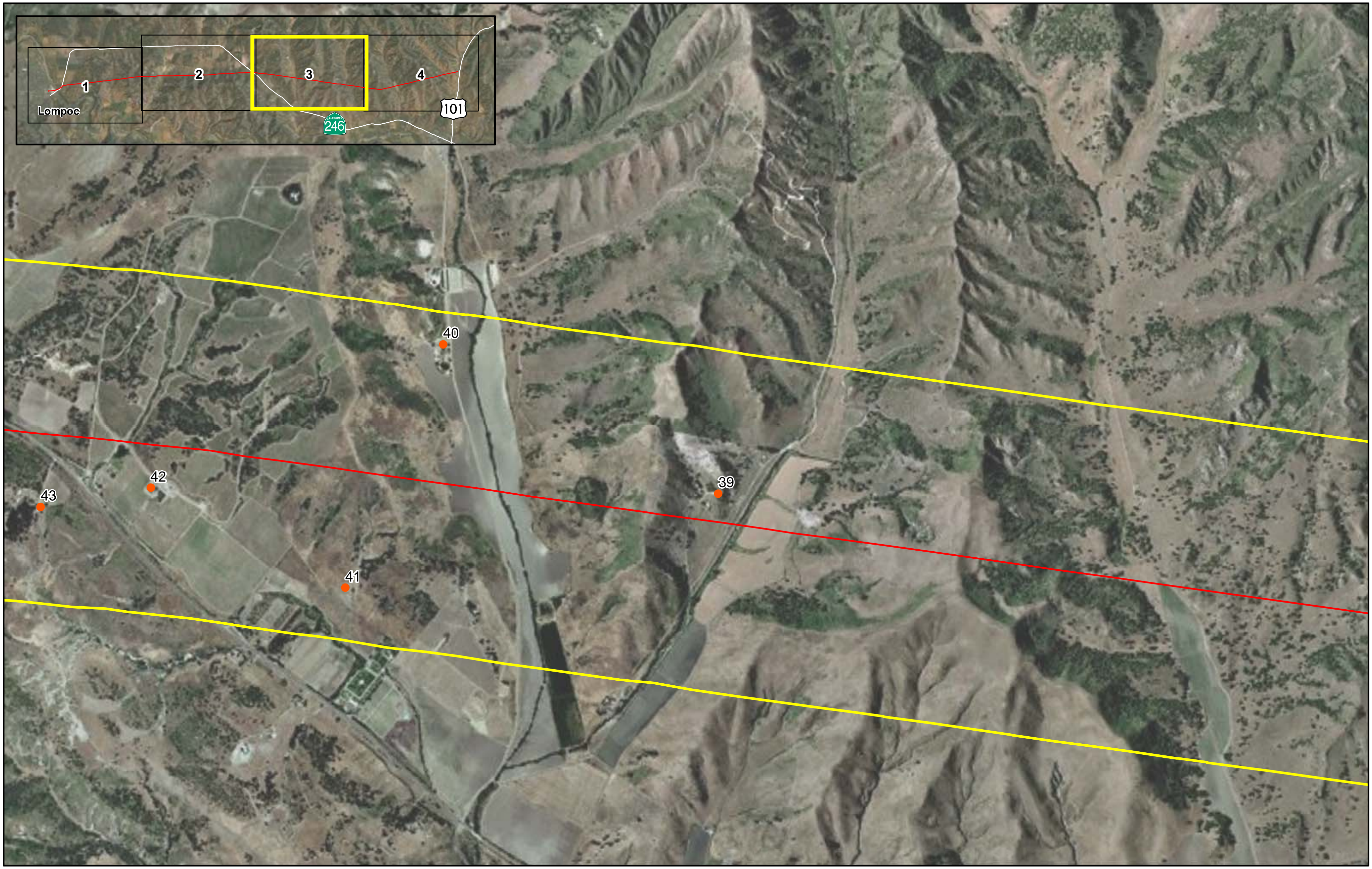
FIGURE 4.3-1 Map 2
Sensitive Receptors
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1,000 2,000 Feet

N

Scale: 1:24,000



Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

Church

Parks

City Boundary

Residence

Residential Area

PG&E

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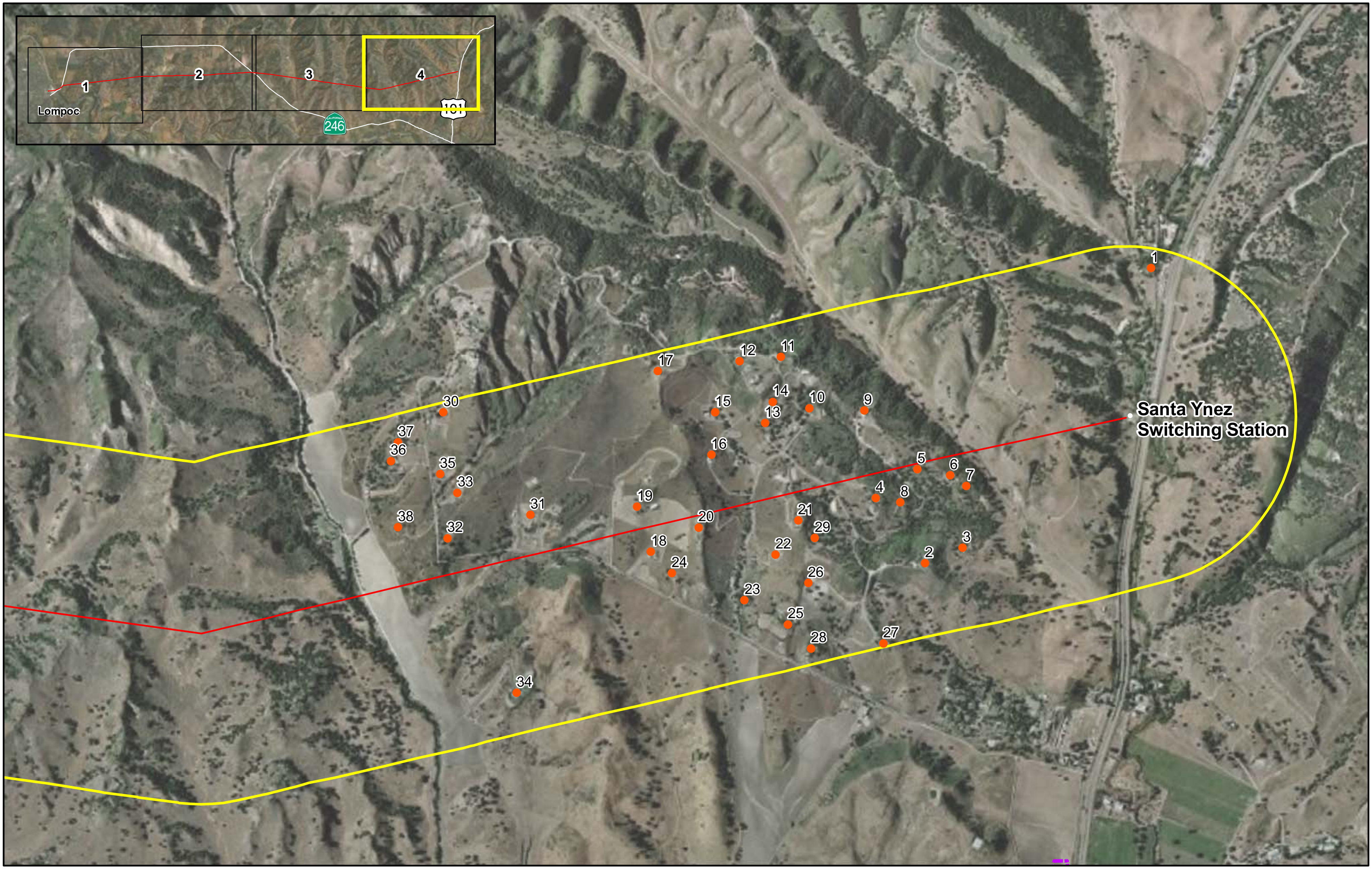
FIGURE 4.3-1 Map 3
Sensitive Receptors
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 1,000 2,000 Feet

Scale: 1:24,000



Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

Church

Parks

City Boundary

Residence

Residential Area

Rev. 6: 06/29/2009

FIGURE 4.3-1 Map 4
Sensitive Receptors
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 1,000 2,000 Feet

Scale: 1:24,000

the following list. Criteria with anticipated less than significant impacts are discussed in Section 4.3.4.3, Construction, Temporary Impacts.

For construction impacts, the SBCAPCD uses 25 tons per year for ROC or NO_x as a guideline for determining the significance of those construction impacts (SBCAPCD, 2008). This quantitative threshold was used to evaluate whether construction emissions could violate any air quality standard or will result in a cumulatively considerable net increase in emissions.

Would the Project:

III.a) Conflict with or obstructed implementation of the applicable air quality plans? No impact will occur; no mitigation is needed.

The 2007 CAP and the Air Quality Supplement to the *Santa Barbara County Comprehensive Plan* were reviewed to determine whether Project would conflict with air quality plans. The 2007 CAP presents the strategy to continue to improve air quality in the County. The SBAPCD is responsible for implementing and regulating stationary and area sources of air emissions. The 2007 CAP plan was prepared in partnership with the Santa Barbara County Association of Governments (SBCAG), the CARB, and the USEPA to address mobile source emissions and federally regulated stationary sources. SBCAG developed the transportation control measures, and estimated the on-road mobile source emissions, CARB provided information on statewide mobile sources and consumer product control measures, and the USEPA provided information on the status of the control efforts for federally regulated sources. The control measures in the plan address SBAPCD regulations on stationary and area sources of emissions and CARB's regulation of mobile source emissions. Operation of Project, a power line, will not result in air emissions and the Project is not subject to stationary, area, or mobile source regulations.

The Air Quality Supplement to the *Santa Barbara County Comprehensive Plan* is a mandated element of the Comprehensive Plan. The Air Quality Supplement discusses land use planning procedures that reduce automobile driving. Although these plans do not apply to the Project, the Project will nevertheless be consistent with the goal of the Air Quality Supplement because it will not increase regional vehicles miles traveled. The Project will also be consistent with Policy E (integration of long-range planning with air quality) of the Air Quality Supplement. Operation and maintenance of the Project will be similar to existing operations and is not expected to generate additional emissions. The Project is consistent with the goals of the 2007 CAP and the policies in the Air Quality Supplement of the County's Comprehensive Plan. No impact is anticipated.

III.b) Violate any air quality standard or contributed substantially to an existing or projected air quality violation? With implementation of APM AQ-1, the impact will be less than significant.

Potential Impact Air Quality (AQ)-1 is discussed in Section 4.3.4.2, Construction. With implementation of APM AQ-1, the impact will be less than significant.

III.c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)? No impact will occur; no mitigation is needed.

Project activities are not expected to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment. No impact is anticipated.

III.d) Expose sensitive receptors to substantial pollutant concentrations? No impact will occur; no mitigation is needed.

Project activities are not expected to expose sensitive receptors to substantial pollutant concentrations. No impact is anticipated.

III.e) Create objectionable odors affecting a substantial number of people? No impact will occur; no mitigation is needed.

Significant odors will not be generated; therefore, no odor impacts are anticipated.

Temporary impacts from construction and impacts from operation were evaluated for GHG emissions. The following discussion evaluates potential Project impacts against the significance criteria.

Would the Project:

GHG.a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Less than significant impact will result with implementation of APM GHG-1; no mitigation is needed.

GHG emissions directly generated during construction of the Project will be a less than significant short-term increase. The short-term increase in GHG emissions (427 metric tons CO_2) during construction is minimal when compared to the AB 32 2020 emission limit of 427 million metric tons CO_2e. With implementation of APM GHG-1, short-term GHG emissions will be approximately 379 metric tons CO_2.

Operation of the Project may result in GHG emissions from activities associated with maintaining the power line. PG&E will continue to periodically monitor and inspect this power line segment at the same or at a reduced level of frequency. Thus there will be no significant change in GHG emissions associated with ongoing maintenance activities; no temporary or permanent impact will result.

GHG.b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? No impact will occur; no mitigation is needed.

The Project will not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions. The minimal short-term construction GHG emissions will not interfere with the long-term goal of AB 32 to reduce GHG emissions to 1990 levels by 2020. Operation of the Project will not result in generating additional GHG emissions. Therefore, the Project will not conflict with plans, policies, or regulations intended to reduce GHGs.

The voluntary actions by PG&E, summarized below, continue to reduce current and future GHG emissions relative to the current emissions deadline:

- PG&E is an active member of the SF6 Emission Reduction Partnership for Electric Power Systems, a voluntary program between the Environmental Protection Agency (USEPA) and electric power companies that focuses on reducing emissions of SF6 from transmission and distribution operations. Since 1998, PG&E has reduced the SF6 leak rate by 89 percent and absolute SF6 emissions by 83 percent.
- PG&E supports the Natural Gas STAR, a program promoting the reduction of methane (at least 21 times as potent as CO_2 on a per-ton basis) from natural gas pipeline operations. Since 1998, PG&E has avoided the release of thousands of tons of methane.
- In June 2007, PG&E launched the ClimateSmart program, a voluntary GHG emission reduction program that allows its customers to balance out the GHG emissions that are produced by the energy they use, making their energy use "climate neutral." For ClimateSmart customers, PG&E calculates the amount needed to make the GHG emissions associated with the customer's energy use "climate neutral" and adds this tax-deductible amount to their monthly energy bill. One hundred percent of customer payments are applied to funding new GHG emission reduction projects in California, such as projects that capture methane gas from dairy farms and landfills and those that conserve and restore California's forests.
- PG&E is offsetting all of the GHG emissions associated with the energy used in PG&E's buildings by participating in its ClimateSmart program. In 2007, this amounted to over 50,000 tons of CO_2 reductions.

In July 2004, the CARB adopted a measure to limit diesel-fueled commercial motor vehicle idling. CARB will review and adopt Early Action Measures (pursuant to the California Global Warming Solutions Act of 2006) by January 1, 2010, and equipment used during operation of the Project facilities after 2010 will be subject to these requirements. PG&E will implement the CARB Early Action Measures for publicly-owned electric utilities as these policies become effective and will continue its efforts with the USEPA to identify and implement cost-effective operational and technical solutions to reduce SF6. These actions will further reduce company-wide GHG emissions for all PG&E projects.

4.3.4.2 Applicant Proposed Measures

PG&E will implement the following APMs to minimize construction-related impacts to air quality:

APM Air Quality (AQ)-1: Fugitive dust minimization. The following fugitive dust control measures will be implemented during construction. According to the SBCAPCD, implementation of these measures minimizes fugitive dust emissions to a level of insignificance. Notes in brackets are clarifications to the SBCAPCD measures as they would apply to this linear project:

- During construction, PG&E will use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Watering frequency will increase whenever the wind speed exceeds 15 mph. Reclaimed water will be used whenever possible. However, reclaimed water will not be used in or around crops for human consumption. [This measure is interpreted as applying to areas such as graded areas and not intended for construction sites, and is not being interpreted here as applying to light-duty access road use by PG&E vehicles accessing pole sites for one or two days, or to pull sites where vegetation is not being cleared.]
- Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.
- Gravel pads [or equivalent] must be installed at all access points to prevent tracking of mud on to public roads. [Specific measures to prevent mud tracking will be provided in the Storm Water Pollution Prevention Plan which is discussed in APM Water Quality (WQ)-1: SWPPP development and implementation.]
- After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur. [The only clearing and grading anticipated is the reestablishment of existing unpaved access roads. After construction, those unpaved access roads will be returned to their normal operations and maintenance use; therefore, no additional dust control measures are needed]. PG&E shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the SBCAPCD prior to land use clearance for map recordation and land use clearance for finish grading for the structure. [No map recordation is needed for this Project.]
- Prior to land use clearance, the applicant shall include, as a note on a separate informational sheet to be recorded with map, these dust control requirements. All requirements shall be shown on grading and building plans. [No map recordation is needed for this Project.]

APM GHG-1: GHG emissions minimization. The following measures will be implemented during construction to minimize GHG emissions.

- Park-and-ride facilities in the Project vicinity will be identified and construction workers will be encouraged to carpool to the job staging area to the extent feasible. The ability to develop an effective carpool program for the Proposed Project will depend upon the proximity of carpool facilities to the staging area, the geographical commute departure points of construction workers, and the extent to which carpooling will not adversely affect worker arrival time and the Project's construction schedule. Crew transportation to the Project site is discussed in Section 4.10, Traffic and Transportation.

- Unnecessary construction vehicle 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.
- Construction equipment will be maintained in good working order, per manufacturing specifications. Low-emission construction equipment will be used where feasible to further minimize the minimal short-term increase in GHG emissions. With implementation of APM GHG-1, the entire construction effort for this project is forecasted to create 379 metric tons of CO_2 which represents a small fraction of the emissions limit set by AB322020 (427 million metric tons CO_2e).

4.3.4.3 Construction

Temporary impacts from construction were evaluated for the nonattainment pollutants PM_{10} and ozone (NO_x and ROC) and the attainment pollutants CO, SO_2, and $PM_{2.5}$. The following discussion evaluates potential Project construction impacts against the significance criteria.

Potential Impact AQ-1: Violate any air quality standard or contribute substantially to an existing or projected air quality violation. **Less than significant impact will result with implementation of APM AQ-1 and no mitigation is needed.** Exhaust emissions from construction equipment result in short-term emissions of ROC, NOx, CO, SO_2, PM_{10}, and $PM_{2.5}$. As shown in Table 4.3-4, the construction phase ROC and NOx emissions are expected to be less than the quantitative thresholds of significance for construction projects established by the SBAPCD (25 tons per year). Quantitative thresholds have not been established for CO, SO_2, PM_{10}, or $PM_{2.5}$ emissions. However, construction exhaust CO, SO_2, PM_{10}, and $PM_{2.5}$ emissions are expected to be minimal, as shown in Table 4.3-4. Therefore, construction emissions are not expected to violate any air quality standard or to contribute substantially to an existing or Project air quality violation. Air quality impacts from construction exhaust emissions are expected to be less than significant, and mitigation is not required.

TABLE 4.3-4
Construction Emission Estimates
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Emission Source and Thresholds	Emissions (tons/project)						
	ROC	NOx	CO	SO_2	Exhaust PM_{10}	Fugitive PM_{10}	Exhaust $PM_{2.5}$
Total Project Construction Emissions	0.4	2.7	2.1	0.03	0.1	7	0.1
SBAPCD Threshold	25 ton/yr	25 ton/yr	NA	NA	NA	NA	NA
Threshold Exceeded?	No	No	NA	NA	NA	NA	NA

Notes:

Fugitive PM_{10} emissions do not include reductions from implementation of APM AQ-1.

NA = Quantitative threshold has not been established.

Fugitive particulate matter emissions during construction will result from soil disturbance and travel on paved and unpaved roads. Table 4.3-4 presents the fugitive PM_{10} emissions from Project construction. The construction emission estimates in Table 4.3-4 do not include reductions that will result from implementation of APM AQ-1. Implementation of this measure will minimize fugitive PM_{10} emissions during Project construction. Therefore, with implementation of APM AQ-1, fugitive dust emissions are not expected to violate any air quality standard or result in an air quality violation. Air quality impacts from fugitive dust will be less than significant, and mitigation is not required.

Potential Impact AQ-2: Expose sensitive receptors to substantial pollutant concentrations. A less than significant impact will result and no mitigation is needed. As described above, sensitive receptors are locations where people more vulnerable to air emissions reside. Project construction will not be expected to result in substantial pollutant concentrations (as described above); therefore, the air quality impact will be less than significant, and mitigation is not required.

Potential Impact AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)? A less than significant impact will result and no mitigation is needed. Project construction is not expected to result in a cumulatively significant increase in the nonattainment pollutants NOx or ROC (ozone precursors) because the emissions will be less than the significance thresholds (see Table 4.3-4). In addition, fugitive PM_{10} emissions will be minimized with the implementation of the APM AQ-1and APM GHG-1; therefore, the air quality impact will be less than significant, and mitigation is not required.

The short-term increase in GHG emissions (269 metric tons CO_2) during construction is minimal when compared to the 2020 emission limit of 427 million metric tons CO_2e. Therefore, construction GHG emissions will not interfere with the CARB's long-term goal to reduce GHG emissions to 1990 levels by 2020.

4.3.4.4 Operation and Maintenance

Operation of the Project will not result in impacts to air quality. PG&E will continue to periodically monitor and inspect this power line segment at the same or at a reduced level of frequency. Thus there should be no significant change in emissions associated with ongoing maintenance activities; no temporary or permanent impact will result.

4.3.5 Works Cited

California Air Resources Board (CARB). 2007a. "California 1990 Greenhouse Gas Emissions Level and 2020 Limit." December. Available online at: http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm. Accessed March 17, 2009.

__________. 2007b. "Overview of the Air Toxics 'Hot Spots' Information and Assessment Act." Available online at: http://www.arb.ca.gov/ab2588/overview.htm. Accessed March 12, 2009.

__________. 2009a. "Ambient Air Quality Standards." Available online at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed on January 27, 2009.

__________. 2009b. "Area Designations." Available online at: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed March 12, 2009.

__________. 2009c. "Air Quality Data Statistics." Available online at: http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start. Accessed March 12, 2009.

California Climate Change Portal (CCCP). 2009. Climate Change and Impacts on California. Available online at: http://www.climatechange.ca.gov/background/index.html. Accessed June 18, 2009.

California Office of Planning and Research (OPR). 2009. "Proposed Amendments to CEQA Guidelines". Available online at: http://opr.ca.gov/ceqa/pdfs/PA_CEQA_Guidelines.pdf. Accessed June 25, 2009.

Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for Policymakers. Climate Change 2007: The Physical Science Basis.

Santa Barbara County. 1981. Air Quality Supplement to the Land Use Element of the *Santa Barbara County Comprehensive Plan*. March.

__________. *Environmental Thresholds and Guidelines Manual*. 2008. Revised September 2008. Published October 2008.

Santa Barbara County Air Pollution Control District (SBCAPCD). 2007. *Final 2007 Clean Air Plan*. August.

__________. 2008. *Scope and Content of Air Quality Sections in Environmental Documents*. June.

United States Environmental Protection Agency (USEPA). 2006. *AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Chapters 13.2.1 and 13.2.2*. November.

__________. 2009. *Glossary of Climate Change Terms*. Available online at: http://epa.gov/climatechange/glossary.html#S. Accessed June 18, 2009.

__________. 2009. Table of $PM_{2.5}$ Designations. Available online at: http://www.epa.gov/pmdesignations/2006standards/documents/2008-12-22/finaltable.htm. Accessed March 12, 2009.

Yolo-Solano Air Quality Management District. 2007. *Handbook for Assessing and Mitigating Air Quality Impacts.* July.

4.4 Biological Resources

4.4.1 Introduction

This section describes biological resources in the Project area and identifies potential impacts to habitats and species that could result from implementation of the proposed Project. Reconnaissance-level plant and wildlife habitat characterization surveys were conducted during the winter of 2009. Wetland delineations were conducted in winter and spring of 2009. Rare plant surveys began in spring 2009 and will conclude in summer 2009.

The following significance criteria are based on the CEQA Appendix G checklist and summarize the potential impacts to biological resources. Potential impacts are less than significant through avoidance of sensitive resources and implementation of APMs described in this section.

BIOLOGICAL RESOURCES-- Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Substantially effect, reduce in numbers, restrict range or cause loss of habitat for a population of a state or federally listed threatened or endangered species; special-status species, including fully protected, candidate proposed for listing, CSC; and certain CNPS list designations?	❒	❒	☒	❒
b) Substantially reduce habitat for native fish, wildlife, or plants?	❒	❒	☒	❒
c) Substantially disturb wetlands, marshes, riparian woodlands, and other wildlife habitat?	❒	❒	☒	❒
d) Substantially interfere with the movement of any resident or migratory fish or wildlife species?	❒	❒	☒	❒
e) Remove of trees designated as heritage or significant under County or local ordinances?	❒	❒	❒	☒
f) Conflict with local habitat conservation plan or other approved local, regional, or state plan?	❒	❒	❒	☒

Unless otherwise noted, information presented below is summarized from the Biological Resources Technical Report for the Cabrillo-Santa Ynez 115 kV Reconductoring Project, attached as Appendix B-1.

4.4.1.1 Regulatory Background

The CPUC has primary jurisdiction over the Project by virtue of its approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over this type of utility project, such projects are exempt from local land use regulations and permitting. PG&E provides local plans and biological resource policies, and local issues information in this section for informational purposes only.

4.4.1.2 Federal

U.S. Fish and Wildlife Service and National Marine Fisheries Service. The federal Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration [NOAA] Fisheries. Section 9 of the ESA prohibits the take of listed fish and wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 USC 1538).

Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Formal consultations determine whether a proposed agency action(s) is likely to jeopardize the continued existence of a listed species (jeopardy) or destroy or adversely modify critical habitat (adverse modification). Through consultation and the issuance of a Biological Opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the action will not jeopardize the continued existence of the species.

Formal consultations perform several other functions: they (1) identify the nature and extent of the effects of federal (agency) actions on listed species and critical habitat; (2) identify reasonable and prudent alternatives, if any, when an action is likely to result in jeopardy or adverse modification; (3) provide mandatory reasonable and prudent measures to minimize the effects of incidental take to listed species; (4) identify voluntary ways the action agencies can help conserve listed species or critical habitat when they undertake an action; and (5) provide an administrative record of effects on a species that can help establish the species' environmental baseline in future biological opinions.

Section 10 of federal ESA provides for issuance of incidental take permits to private parties provided a habitat conservation plan is developed. The private party initiates consultation with the USFWS and/or NOAA Fisheries through informal consultation to discuss target species in the project area, and then prepares a Habitat Conservation Plan (HCP) assessing the potential for the project to adversely affect federally listed species and the measures that will be undertaken to avoid, and minimize such impacts. Once the HCP has been received, the USFWS has 135 days to issue a BO on whether the project will affect federally listed species.

Migratory Bird Treaty Act (16 U.S.C. § 703–711). The Migratory Bird Treaty Act (MBTA) of 1918 protects all migratory birds, including active nests and eggs. Birds protected under the Act include all native waterfowl, shorebirds, hawks, eagles, owls, doves, common songbirds such as, ravens, crows, swifts, martins, swallows and others, including their body parts (feathers, plumes etc), active nests, and eggs. A complete list of protected species is found at 50 CFR 10.13. Enforcement of the provisions of the MBTA is the responsibility of the USFWS.

Bald and Golden Eagle Protection Act (16 U.S.C. § 668). The Bald and Golden Eagle Protection Act (BGEPA) of 1940 specifically protects bald and golden eagles and their nests from harm or trade in parts of these species. The 1972 amendments increased penalties for violating provisions of the BGEPA or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act.

Waters and Wetlands: Clean Water Act (CWA) Sections 401 and 404. The CWA's purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b).

The U.S. Army Corps of Engineers (USACE) issues permits based on guidelines established under Section 404 (b) (1) of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899. Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States", including wetlands, without a permit from USACE. The U.S. EPA also has authority over wetlands and may under Section 404(c) veto a USACE permit. Under Section 10 of the Rivers and Harbors Act, the USACE has the authority to regulate the navigable capacity of any of the waters of the United States. Under this Act, it is not lawful to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of…any navigable water of the United States…"

Depending on the amount of impacts to Waters of the U.S., a USACE Section 404 permit application can either: a) invoke usage of any of the 50 Nationwide Permits issued in March 12, 2007 (Federal Register, Vol. 72, No. 47)) or b) entail the submittal of an Individual Permit application. If the project would have minimal individual and cumulative adverse effects on the aquatic environment and if General Conditions are met, one (or more than one) of the Nationwide Permits could be used and a Pre-Construction Notification would be required. If more than a minimal effect on the aquatic environment is expected, then an Individual Permit must be obtained.

All Section 404 CWA permit actions require water quality certification or a waiver pursuant to Section 401 of the CWA. This authority has been delegated by EPA to the state level and this certification or waiver is issued by the appropriate state water quality authority (in California this is delegated by the Regional Water Quality Control Boards). Section 401 is addressed more fully in Section 4.8, Hydrology and Water Quality.

4.4.1.3 State

California Endangered Species Act (CESA). Sections 2050-2098 of the California Fish and Game Code (CFGC) prohibit the take of State-listed endangered and threatened species unless specifically authorized by the California Department of Fish and Game (CDFG). CDFG administers CESA and authorizes take through permits or memorandums of understanding issued under Section 2081 of CFGC, or through a consistency determination issued under 2080.1. Section 2090 of CFGC requires state agencies to comply with threatened and endangered species protection and recovery and to promote conservation of these species.

The state definition of take is to hunt, pursue, catch, capture, or kill a member of a listed species or attempt to do so.

Fully Protected Species CFGC Sections 3511, 4700, 5050, and 5515. CFGC Sections 3511, 4700, 5050, and 5515 (Fully Protected Species) designates certain animal species as "fully protected" under sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish). Fully protected species may not be taken or possessed at any time and no permits may be issued for incidental take of these species.

Protection for Birds: CFGC Section 3503 et seq. Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3513 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Native Plant Protection Act of 1973 (NPPA) (CFGC Sections 1900-1913). The NPPA includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. The CDFG administers the NPPA and generally regards as "rare" many plant species included on lists 1A, 1B and 2 and sometimes list 3 and 4 of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California.

Title 14, California Code of Regulations (Sections 670.2 and 670.5). Title 14, California Code of Regulations (Section 670.2 and 670.5) lists animals designated as threatened or endangered in California. California "Species of Concern" (CSC) is a category conferred by the California Department of Fish and Game (CDFG) on those species that are indicators of regional habitat changes or considered potential future protected species. CSC do not have any special legal status, but are intended by CDFG for use as a management tool to take these species into special consideration when decisions are made concerning the future of any land parcel.

4.4.1.4 Local Laws and Other Jurisdictions

The County of Santa Barbara Environmental Thresholds and Guidelines Manual (http://www.sbcountyplanning.org/PDF/ManualsReports/Manuals/Environmental_Thrshlds.pdf) contains criteria for determining the significance of an impact to biological resources. The manual references CEQA guidance for biological impact assessment and states that environmental impact analysis and mitigation is required to include federal and state biological resource regulations.

The City of Buellton General Plan 2025 includes a Conservation and Open Space Element; it establishes policies and programs to protect and preserve the natural resources in and around Buellton, including creeks, hillsides and scenic areas. The City of Lompoc General Plan includes a Resource Management Element. Among others, Goal #2 of the Element is "protect natural habitats in recognition of their biological, educational, and scientific value." One of the policies of this goal is the preservation of "biologically sensitive areas." The General Plan designates the Santa Ynez River as biologically sensitive.

4.4.2 Methodology

4.4.2.1 Habitat and Plant Types

Habitat types in the Project area were mapped using 1:5,200 (1 inch = 433 feet) scale color aerial photographs and are based on reconnaissance-level field surveys that were conducted by vehicle and on foot from January 20-23, 2009. The purpose of these surveys was to identify and map potential habitat for special-status wildlife species and to field-verify the mapped vegetation typing that was based on remote GIS sensing techniques. General habitat was characterized for the alignment and area adjacent to the Project; however, field surveys were limited to the anticipated work areas. The power line alignment and the habitat adjacent to the alignment, approximately 200 feet wide, centered on the existing power line were mapped (Appendix B-1 maps). Vegetation community designations follow Holland (1986) and/or Sawyer and Keeler-Wolf (1995).

4.4.2.2 Wetlands and Aquatic Resources

The wetland delineation field survey was conducted from January 20-23 and April 20-22, 2009 by CH2M HILL wetland ecologists. The purpose of the field surveys was to identify and map the limits of wetlands and other waters within the limits of the approximately 73-acre Project survey area including the 40-foot-wide right of way, as well as laydown and staging areas. Access roads identified as requiring clearing and grading and overland routes were surveyed to ensure no wetland or other waters were present in these areas. The survey methodology followed the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Region Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008). Using this methodology, positive indicators of hydrophytic vegetation, wetland hydrology, and hydric soils are necessary for an area to be considered a wetland except in limited instances (e.g., problem areas, atypical circumstances, or recently disturbed sites).

4.4.2.3 Special-Status Species

The potential for special-status species, as defined below, was evaluated first using available database information, then refined through consultation with local experts, resource agencies and site visits. Preliminary investigations included: a search of the California Natural Diversity Database (CNDDB) occurrence records within the 15 surrounding U.S. Geological Survey (USGS) quadrangles; the California Native Plant Society's Electronic Inventory of Rare, Threatened and Endangered Plant Species; communications with local experts; review of aerial photographs to identify potential habitats for special-status species; and site reconnaissance. The USGS quadrangles researched include Casmalia, Foxen Canyon, Lompoc, Lompoc Hills, Los Alamos, Los Olivos, Orcutt, Santa Rosa Hills, Santa Ynez, Sisquoc, Solvang, Surf, Tranquillon Mountain, Zaca Creek, and Zaca Lake. A comprehensive list of special-status species identified for the area based on the research was refined using the results of site visits and discussions with local experts (Appendix B-1).

A plant was considered to be of special status if it met one or more of the following criteria:

- Federally or State-listed, or proposed for listing, as rare, threatened or endangered;
- Special Plant as defined by the CNDDB; or

- Listed by the California Native Plant Society in the online version of its *Inventory of Rare and Endangered Plants of California* (CNPS, 2009). Species designated as List 4 by the CNPS were considered only if the species was considered locally rare or restricted to Santa Barbara County.

Special-status wildlife includes species that:

- are listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act;
- are listed or candidates for listing as threatened or endangered under the California Endangered Species Act;
- are designated as Species of Special Concern by the CDFG;
- are listed on the CDFG "Special Animals" list (CDFG, 2008a); or
- otherwise meet the definition of rare, threatened or endangered, as described in the CEQA Guidelines, Section 15380.

CEQA guidelines include consideration of non-listed species. A species that is not listed will also be considered rare or endangered if it can be shown to meet the following criteria: when its survival and reproduction in the wild are in immediate jeopardy from one or more causes; it is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment deteriorates; or it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (CEQA Guidelines Section 15380).

Special-Status Rare Plant Species Survey Methods

Surveys for special-status plants and their habitats were conducted within a 40-foot-wide survey corridor during the spring of 2009 by Garcia and Associates botanists (Appendix B-2). Two rounds of spring surveys were conducted on the following dates: March 2-6, 2009 and April 20-25, 2009. A third visit is scheduled for July 6-10, 2009. This range of survey dates was selected to encompass the blooming times of all of the special-status plants that could potentially occur within the Project area. The objectives of the protocol-level surveys were to locate all populations of special-status plants within Project area, and precisely record and map their locations using agency appropriate field survey methods.

All areas identified as potential habitat for rare plants within with Project work areas were visited during the times when special-status plants associated with those habitat types would be likely to be blooming and/or identifiable. In addition to the 40-foot-wide corridor, pole site work areas, pull and tension sites, laydown areas, access roads needing vegetation management or grading and overland routes were also surveyed. All the work areas were surveyed on foot. Vehicles were used on existing roads to coordinate and facilitate access in some locations. Any special-status species plants observed from the right-of way or while accessing the Project area along designated routes during the surveys were noted.

Special-Status Wildlife Species Survey Methods

Habitat assessments were performed on January 20-23, 2009 to assess and evaluate potential impacts for special-status wildlife species within the Project area as summarized in 4.2.2.1 (Appendix B-1).

Summer 2009 surveys by Dr. Richard Arnold, Entomological Consultants LTD, are planned to review suitable habitat for Lompoc grasshopper (*Trimerotropis occulens)* in the Project work areas and determine presence or absence of the species. A technical report detailing the results will be prepared following the survey. If presence is confirmed, PG&E will work with federal and state resource agencies to develop appropriate avoidance and protection measures.

4.4.3 Existing Conditions

4.4.3.1 Habitat Types

Habitat types present within the Project area consist primarily of California annual grassland, Central Coast scrub, and Coast live oak woodland. California annual grassland is an upland community composed of dense to sparse cover of mainly introduced annual grasses, usually approximately 1-3 feet in height. Characteristic species include soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), and foxtail chess (*B. madritensis*). Central Coast scrub found in the Project area is typically dominated by California sagebrush (*Artemisia californica*) with black sage (*Salvia mellifera*) and coyote brush (*Baccharis pilularis)* often occurring as associated species. Coast live oak woodland typically integrates with California annual grassland and Central Coast scrub. The overstory of this community is characterized by coast live oak (*Quercus agrifolia)* with an understory of hedge nettle (*Stachys bullata*), pitcher sage (*Salvia spathacea*), miners lettuce (*Claytonia perfoliata*), fiesta flower (*Pholistoma auritum*), bedstraw (*Gallium* sp.), and a variety of other native annual herbs and non-native grasses.

Table 4.1-1 below lists all habitat types represented, including their spatial coverage in the Project area and immediately adjacent vegetation as described in Section 4.4.2.1.

TABLE 4.1-1
Extent of Vegetation Types in the Project Area and Adjacent Vegetation
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Vegetation Type	Area (Acres)
California annual grassland	95.24
Coast Live Oak Woodland	72.33
Central (Lucian) Coast Scrub	107.71
Riparian Scrub[1]	3.87
Freshwater Ponds[2] and Seeps	1.19
Mulefat Scrub[1]	0.86
Agriculture	47.58
Developed/Landscaped	10.32
Ruderal	5.41

TABLE 4.1-1
Extent of Vegetation Types in the Project Area and Adjacent Vegetation
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Vegetation Type	Area (Acres)
Total	**344.51**

Source: GANDA, 2009

Notes:

[1] associated with the Santa Ynez River, which is not an area of impact.

[2] includes man-made stock ponds and detention basins and the wetland area northeast of SR 246.

Seasonal wetlands and numerous other aquatic habitat features occur at various locations within the Project area. The Santa Ynez River flows through the western extent of the Project area. Numerous ephemeral tributaries to the Santa Ynez River occur along the power line route from the river east towards Buellton. Stock ponds and detention basins are also found in the Project area and vicinity. In January and April 2009, wetland scientists conducted a delineation of areas that are likely to be considered jurisdictional under Section 404 of the Clean Water Act. The delineation report is being finalized. A copy will be provided to the CPUC when the report is submitted for verification to the USACE.

4.4.3.2 Special-Status Species

The reconnaissance-level field surveys determined that habitat elements for several special-status species were present in the Project area, as described below and in Appendix B-1.

Special-Status Plants

Botanists have been conducting protocol-level special-status plant surveys for the Project. The survey area includes all temporary and permanent Project impact areas within the right-of–way as well as temporary staging areas and access roads requiring clearing and grading. The surveys started in March 2009 and will be completed during the summer of 2009, coinciding with the blooming periods of potential rare plant species. To date, five special-status plants species have been identified in the Project area, including: one CNPS list 1B species: California (or Mesa) horkelia (*Horkelia cuneata* ssp. *puberula*); and four CNPS list 4 species: Lompoc ceanothus (*Ceanothus cuneatus* var. *fascicularis*), Nuttall's milkvetch (*Astragalus nuttallii*), San Luis Obispo wallflower (*Erysimum capitatum* ssp. *lompocense*), and California spineflower (*Murcinea californica*). Preliminary rare plant results are included as Appendix B-2. A technical report detailing the results of the final rare plant survey will be prepared following the final survey. Any new rare plant species observations will be discussed and any additional APMs to address the specific species will be included.

Special-Status Wildlife

The power line route traverses through USFWS-designated critical habitat and proposed critical habitat for federally-listed wildlife species (See Figure 4.4-1). Critical Habitat Unit 6 - Santa Rita Valley - for California tiger salamander (*Ambystoma californiense*) is found within the alignment and work areas near the intersection of SR 246 and the Project. The Santa Ynez River from its mouth upstream to Lake Cachuma (upstream of the Project) is designated critical habitat for Southern California steelhead (*Oncorhynchus mykiss*). The

USFWS Critical Habitat
Steelhead Critical Habitat
Power Line ROW (40')
Power Poles to be Replaced
Existing Power Poles
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')

Rev. 6: 06/29/2009

FIGURE 4.4-1
Critical Habitat Map 1
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 500 1,000 Feet
Scale: 1:8,000

USFWS Critical Habitat
Steelhead Critical Habitat
Power Poles
Power Line ROW (40')
County Roads
Existing Access Road
Existing Access Road Reestablished Through Grading and Vegetation Removal
Overland Access Route
Potential Lay Down Area
Potential Pull and Tension Site
Potential Staging Area
Power Pole Work Areas (40'x100')

Rev. 6: 06/29/2009

FIGURE 4.4-1
Critical Habitat Map 2
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 500 1,000 Feet

N

Scale: 1:8,000

Santa Ynez River riparian corridor, from one mile upstream and east of SR 1 to one mile downstream and west of US 101, is proposed as Critical Habitat (Santa Ynez Management Unit) for southwestern willow flycatcher (*Empidonax traillii extimus*).

Several other listed wildlife species are known to occur in this Project area, including California red-legged frog (*Rana draytonii*), western spadefoot toad (*Spea hammondii*) and western pond turtle (*Actinemys marmorata pallida*). Protocol-level surveys for these three species and California tiger salamander are unnecessary since these species are already known from the area and suitable habitat has been identified. Detailed species information for all special-status wildlife with the potential to occur in the Project area is provided in the *Biological Resources Technical Report* (Appendix B-1). A summary of this species information is provided below.

Insects

Two insect species of local importance have a low to moderate potential to occur in the Project area or its vicinity. The Monarch butterfly (*Danaus plexippus*) winter roosts in wind-protected tree groves found along the coast from northern Mendocino County to Baja California, Mexico. Only limited suitable roosting habitat occurs in and adjacent to the Project area.

The Lompoc grasshopper (*Trimerotropis occulens)*, which had been considered extinct, historically occurred in open areas with scattered vegetation cover and in habitat with extensive areas of bare or sparsely vegetated ground. The CNDDB last recorded an observation of this species in 1938 within a non-specific location in the vicinity of Lompoc. Dr. Richard Arnold, of Entomological Services LTD (pers. comm. 2009), has recently made two sighting of this species in the Harris Grade hills area north of Lompoc. Exact location information is not yet available; the Harris Grade hills begin approximately 5 miles north of the Project.

Fishes

The federally endangered Southern California steelhead (*Oncorhynchus mykiss irideus*) is known to occur in the Santa Ynez River and its tributaries, which are also designated as critical habitat. This species spawns in silt-free coastal rivers and streams with a moderate to steep gradient. It requires gravel riffle for spawning and may overwinter in deep, low-velocity pools or lakes. The Santa Ynez River is located toward the western end of the Project, one half mile from the substation, in an area where the poles and conductor are not being replaced (see Figure 4.4-1). None of the tributaries designated as critical habitat for this species occur in the Project area.

Amphibians

Three special-status amphibians are known to be present in the Project area. California red-legged frog is a federally threatened and state species of concern that typically breeds in ponds and pools in slow-moving streams with emergent vegetation; adjacent upland habitats are often used for temporary refuges or dispersal movements. There are five CNDDB occurrences of California red-legged frog within 5 miles of the Project area. The nearest CNDDB occurrence approximately 0.40 miles from the Project along a creek south east of the line crossing at SR 246 (Appendix B-1, Figure 2). Two wetland areas in and adjacent to the Project area are also known to contain populations of California red-legged frog (Appendix B-1, Figure 1, Map 9: Ponds 10A, 10B). Other ponds and seasonal aquatic sites found along the Project route mapped in Appendix B-1 provide potentially suitable habitat for this species.

The Santa Barbara California tiger salamander population is federally-listed as endangered and is a state candidate species for listing. This species is a relatively large, terrestrial salamander that inhabits grassland and oak savannah habitast in the valleys and low hills of central and northern california. The Project route and work areas are within designated Critical Habitat where the central portion of the Project intersects with SR 246. There are two CNDDB occurrences documented at less than 1.2 miles from the Project (Appendix B, Figure 2). Two wetland areas in and adjacent to the Project area are also known to contain populations of California tiger salamander (Appendix B-1, Figure 1, Map 9: Ponds 10A, 10B). Other seasonal ponds found within and adjacent to the Project area provide potential breeding habitat for this species (Appendix B).

Western spadefoot toad, a state species of special concern, primarily occurs in open grassland habitats, but can be found in valley-foothill hardwood woodlands. It prefers open areas with sandy or gravel-laden soils. Vernal pools or rain-pools and/or ponds that do not contain bullfrogs, fish or crayfish are essential for breeding and egg-laying. One CNDDB occurrence of this species was documented in the Project area near SR 246 (Appendix B-1, Figure 2); this species is also known to occur in the wetlands northeast of SR 246 (Appendix B-1, Figure 1, Map 9: Ponds 10A, 10B). Several other ponds (permanent and seasonal) located in the vicinity of the Project area provide potentially suitable breeding habitat (Appendix B).

Arroyo toad (*Bufo californicus*), a federally-listed endangered species and state species of special concern, requires low-gradient stream segments with shallow breeding pools free of predatory fish; sandy or fine gravel beds without silt for egg mass depositing and tadpole development; and exposed sandy terraces and sparsely vegetated sand and gravel bars that are sufficiently wet for burrowing (Jennings and Hayes 1994, Stebbins 2003, CDFG 2008b). There are no CNDDB occurrences of arroyo toad within 5 miles of the Project area and it is not expected to occur in the Project area. Arroyo toad is known to occur in the Santa Ynez River approximately 50 miles upstream from the Project area (Sweet, 1992).

Reptiles

Five state species of special concern have a moderate to high potential to occur in the Project area including the coast (California) horned lizard (*Phrynosoma coronatum*), Coast patch-nosed snake (*Salvadora hexalepis virgultea*), silvery legless lizard (*Anniella pulchra pulchra*), southwestern pond turtle, and two-striped garter snake (*Thamnophis hammondii*).

Coast (California) horned lizard typically occurs in lowlands along sandy washes with scattered low bushes where an abundance of ants and other insect prey are available. The nearest CNDDB record for this species is approximately 4.5 miles northwest of the Project area near the La Purisima Mission State Historic Park. Suitable habitat consisting of loose soils, and colonies of harvester ants were observed during the reconnaissance-level survey, suggesting that this species may occur in the Project area (GANDA 2009).

Coast patch-nosed snake habitat typically consists of rocky or gravelly soils vegetated with low scrub growth and minimum vegetation density (i.e., coastal chaparral or coastal scrub). There are no CNDDB records of this species in the immediate vicinity of the Project area;

however, this species is known to occur at the La Purisima Mission State Historic Park, less than 2 miles north of the Project (Appendix B, Figure 2) (Gevirz 2005).

The silvery legless lizard typically requires moist, warm sandy or loose loamy soils with plant cover in sunny areas and leaf litter under trees and bushes. There are three CNDDB occurrences in the Project vicinity, with the closest approximately 4.3 miles northwest of the Project. This species has the potential to occur in the central coast scrub and coast live oak woodland found in the Project area.

Southwestern pond turtle inhabits permanent and seasonal ponds, lakes, and slow-moving parts of streams. Although there are no CNDDB records of this species within 5 miles of the Project area, the wetlands northeast of SF 246 located within the Project area are known to support this species (Appendix B-1, Figure 1, Map 9: Ponds 10A, 10B), and as reported in Appendix B-1, southwestern pond turtle is common in the seasonal drainages and ponds in the general vicinity (Appendix B-1) (pers. comm. Tom Olson 2009). This species is also known to occur along the Santa Ynez River. During the reconnaissance-level field surveys, several ponds and seasonal drainages located within and adjacent to the Project area were found to provide suitable habitat for pond turtle.

The two-striped garter snake is highly aquatic and is typically found in or near permanent fresh water sources such as ponds, creeks, cattle tanks, and other water sources. There are no CNDDB records of two-striped garter snake within the 5 miles of the Project area and the nearest CNDDB occurrence is approximately 9 miles northeast of Santa Ynez Switching Station. However, there is potential habitat for this snake in the Santa Ynez River and other permanent water sources within the Project area.

Birds

Eleven bird species of special concern have been identified as occur in or near the Project area or considered to have the potential to occur based on the presence of suitable habitat; these species include least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Golden eagles (*Aquila chrysaetos*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), long-eared owl (*Asio otus*), mountain plover (*Charadrius montanus*), tricolored blackbird (*Agelaius tricolor*), western burrowing owl (*Athene cunicularia hypugea*), yellow warbler (*Dendroica petechia brewsteri*), and white-tailed kite (*Elanus leucurus*).

Both the least Bell's vireo and southwestern willow flycatcher are federally- and state-listed endangered species. Both species occur in southern California and are found along riparian systems near water or in dry river bottoms. In the Project area and vicinity, the Santa Ynez River corridor provides suitable foraging and nesting habitat for both species. There are no CNDDB occurrences of least Bell's vireo in the immediate Project vicinity. Critical habitat for the southwestern willow flycatcher is found along the San Ynez River in the Project vicinity (see Figure 4.4-1) and there are two southwestern willow flycatcher occurrences approximately 1.6 miles south and 2.1 miles southeast of the Project area, respectively (CNDDB 2009).

The western yellow-billed cuckoo is a federal and state candidate for listing as a threatened or endangered species. It nests in riparian forests found along broad, lower flood-bottoms of large river systems. A pair was observed in the Project area vicinity in 2000 near the Santa Ynez River (National Audubon Society 2009).

Golden eagles are protected by the federal Bald and Golden Eagle Protection Act and are a California state fully protected species. Golden eagles inhabit rolling foothills and mountain areas. Cliff-walled canyons and large trees in open areas provide nesting habitat in most parts of range. There are no CNDDB records of golden eagle nests in the Project vicinity. Suitable foraging for this species is present in open grasslands of the Project area.

Seven state species of special concern, including grasshopper sparrow, loggerhead shrike, long-eared owl, mountain plover, tricolored blackbird, western burrowing owl, and yellow warbler have a moderate to high potential to occur in the Project area. Although there are no CNDDB records of these species within 5 miles of the Project, the habitat types traversed by the power line provide potentially suitable foraging and nesting habitat (GANDA, 2009).

White-tailed kite, a state fully protected species, nests in oak, willow or other trees and forages over open grasslands. There are no CNDDB records of this species nesting within 5 miles of the Project area; however, suitable foraging and nesting habitat is present in woodland and open annual grasslands throughout the Project area.

Mammals

Five mammals listed as state species of special concern may occur in the Project area, including American badger (*Taxidea taxus*), Pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), western red bat (*Lasiurus blossevillii*), Yuma myotis (*Myotis yumanensis*), and western mastiff bat (*Eumops perotis californicus*).

American badgers inhabit dry open areas of most shrub, forest, and herbaceous habitats. This species requires sufficient food, friable soils, and open, uncultivated ground. There are several CNDDB records of American badger in the vicinity, including one within the Project area (Appendix B-1, Figure 2).

Pallid bats roost in cliff crevices of rock faces, bridges, and occasionally in hollow trees and buildings in and adjacent to open grasslands, shrublands and woodlands. Although caves and rock crevice roosting habitat are lacking along the Project area, there are sufficient tree hollows (i.e., coast live oaks) in the Project area for this species to occur.

Townsend's big-eared bats are found throughout California in a wide variety of habitats; they roost in the open, hanging from walls and ceilings of caves, mines or abandoned structures in or near woodlands and forests. There are several CNDDB records in the Project vicinity, including one less than half a mile from the alignment (Appendix B-1, Figure 2). There is limited suitable roosting habitat for this species in the vicinity of the Project area, consisting of vacant outbuildings, abandoned structures and small bridges visible from the eastern section of the Project alignment.

Western red bats are also common throughout California; they generally prefer habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. There are no CNDDB occurrences within 5 miles of the Project area. Limited suitable foraging and roosting habitat for this species is present within the Project area along the Santa Ynez River and other smaller drainages.

Yuma myotis prefer open forest and woodlands with nearby water sources. This species forages over open water and roosts in large groups in caves, buildings, crevices, mines and under bridges. There is one CNDDB occurrence approximately 2 miles from the Project area in the northern section of the Santa Ynez River (Appendix B-1, Figure 2). The Santa Ynez River, various ponds, and outbuildings likely provide suitable habitat for this species in the vicinity of the Project area.

The western mastiff bat (*Eumops perotis californicus*), a state species of special concern, is an occasional migrant to California and thus is a rare occurrence in Santa Barbara County. There are no CNDDB occurrences within 5 miles of the Project area. Limited suitable foraging and roosting habitat for this species is present in the Project area along the Santa Ynez River and other smaller drainages.

4.4.4 Potential Impacts and Mitigation

4.4.4.1 Significance Criteria

The following section lists the significance criteria for biological resource impacts derived from Appendix G of the CEQA Guidelines and for each, briefly summarizes applicant proposed measures and potential Project-related construction and operational impacts. Applicant proposed measures are described in more detail in Section 4.4.4.2; potential impacts are described in more detail in Sections 4.4.4.3 and 4.4.4.4.

Would the Project:

IV.a) Substantially affect, reduce in numbers, restrict range or result in substantial loss of habitat for a population of a state or federally listed threatened or endangered species; special-status species, including fully protected, candidate proposed for listing, CSC; and certain CNPS list designations? With implementation of APM BO-1 through APM BO-10, potential impacts will be less than significant. Pole replacement and construction activities may occur in or near possibly occupied habitat of sensitive species or sensitive habitat. APMs discussed in Section 4.4.4.2 describe measures to avoid and minimize potential impacts.

IV.b) Substantially reduce habitat for native fish, wildlife, or plants? With implementation of APM BO-1 through APM BO-10, potential impacts will be less than significant. Pole replacement and construction activities may occur in or near possibly occupied habitat of sensitive species or sensitive habitat. APMs discussed in Section 4.4.4.2 describe measures to avoid and minimize potential impacts.

IV.c) Substantially disturb wetlands, marshes, riparian woodlands, and other wildlife habitat? With implementation of APM BO-1 through APM BO-10, potential impacts will be less than significant. Pole replacement and construction activities may occur in or near possibly occupied habitat of sensitive species or sensitive habitat. APMs discussed in Section 4.4.4.2 describe measures to avoid and minimize potential impacts.

IV.d) **Substantially interfere with the movement of any resident or migratory fish or wildlife species? With implementation of APM BO-1 through APM BO-10, potential impacts will be less than significant.** Pole replacement and construction activities will not substantially interfere with movement of species. APMs discussed in Section 4.4.4.2 describe measures to avoid and minimize potential impacts.

IV.e) Remove trees designated as heritage or significant under County or local ordinances? No impact. Reestablishment of access roads will not remove trees designated as heritage or significant under County or local ordinances. No impact will occur; therefore, no mitigation is needed.

IV.f) Conflict with local habitat conservation plan or other approved local, regional, or state plan? No impact. A Regional Conservation Strategy was initiated in Santa Barbara County March 28, 2006 and was discontinued March 25, 2008 due to financial constraints required to develop and implement the strategy. There are no existing Habitat Conservation Plans in the Project area, and therefore, no impact will occur.

4.4.4.2 Applicant Proposed Measures

The following APMs will be incorporated to avoid or minimize impacts to biological resources:

APM Biological Resources (BO)-1: General avoidance of biological resources impacts.

- **Development and implementation of a Worker Environmental Awareness Program.** A qualified biologist will conduct an environmental awareness program for all construction and on-site personnel prior to the beginning of site work. Training will include a discussion of the avoidance and minimization measures that are being implemented to protect biological resources as well as the terms and conditions of the Biological Opinion and other permits. Training will include information on the federal and state Endangered Species Acts and the consequences of noncompliance with these acts. Under this program, workers shall be informed about the presence, life history and habitat requirements of the California red-legged frog, California tiger salamander, western spadefoot toad, southwestern pond turtle, burrowing owl, and American badger. Training will also include information on state and federal laws protecting nesting birds, wetlands and other water resources.

  An educational brochure will be produced for construction crews working on the Project. Color photos of sensitive species will be included, as well as a discussion of the APMs and specific avoidance or minimization measures for sensitive species and habitats.

- **Biological monitor on-site during construction activities in sensitive areas.** A qualified biological monitor will be onsite during ground-disturbing construction activities near and in sensitive habitat as defined and will ensure implementation and compliance with all avoidance and mitigation measures. The monitor will have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel, as appropriate, if construction activities are likely to impact sensitive biological resources. The biological monitor will document monitoring activities in a daily log summarizing construction activities and environmental compliance. The daily logs will be included in the Project report submitted to the agencies following completion of construction.

- **Identification and marking of sensitive resource areas.** Sensitive resources in or adjacent to Project work areas within the alignment identified during the preconstruction surveys such as occupied habitat, active badger, burrowing owl or California tiger salamander burrows or occupied nests in the Project vicinity will be mapped and clearly marked in the field. Such areas will be avoided during construction to the extent practicable and/or additional measures (described below) will be implemented to avoid or minimize impacts.
- **Litter and trash management.** All food scraps, wrappers, food containers, cans, bottles, and other trash from the Project area will be deposited in closed trash containers. Trash containers will be removed from the Project area at the end of each working day.
- **Parking.** Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed or developed areas or work areas as identified in this document. Off-road parking shall only be permitted in previously identified and designated work areas.
- **Route and speed limitations.** Vehicles will be confined to established roadways and pre-approved access roads, overland routes and access areas. Access routes and temporary work areas will be limited to the minimum necessary to achieve the Project goals. Routes and boundaries of work areas, including access roads, will be clearly mapped prior to initiating Project construction. Vehicular speeds will be kept to 15 mph on unpaved roads.
- **Maintenance and refueling.** All equipment will be maintained such that there will be no leaks of automotive fluids such as fuels, solvents, or oils. All refueling and maintenance of vehicles and other construction equipment will be restricted to designated staging areas located at least 100 feet from any down gradient aquatic habitat unless otherwise isolated from habitat. Proper spill prevention and cleanup equipment shall be maintained in all refueling areas.
- **Minimization of fire hazard.** During fire season in designated State Responsibility Areas, all motorized equipment driving off paved or maintained gravel/dirt roads will have federal or state approved spark arrestors. All off-road vehicles will be equipped with a backpack pump filled with water and a shovel. All fuel trucks will carry a large fire extinguisher with a minimum rating of 40 B:C, and all equipment parking and storage areas will be cleared of all flammable materials.
- **Pets and firearms:** No pets or firearms will be permitted at the Project site.
- **Reporting and communication.** The biological monitor will be responsible for immediately reporting any capture and relocation, or inadvertent harm, entrapment or death of a listed species to the U.S. Fish and Wildlife Service and the California Department of Fish and Game. A monitoring report will be submitted to the resource agencies 90 days after the completion of construction activities.

APM BO-2: Avoidance of impacts to natural habitats

- **Minimization of grading and vegetation removal along access roads and pole work areas.** Clearing and grading will be limited to previous access roads that have become overgrown with vegetation. Overland access routes and work areas around pole locations will not require any grading or vegetation removal other than minimal tree trimming as described in the Project description.

- **Tree removal.** A single tree, a Leland Cypress, is planned for removal as described in the Project description. No other tree removal is planned.
- **Re-vegetation.** Since clearing and grading is limited to reestablishment of existing roads, no re-vegetation is needed for the Project. Temporarily disturbed vegetation is expected to recover without the need for reseeding.
- **Weed management.** Prior to work on the Project, vehicles and construction equipment will be cleaned of excessive mud and dirt that may transport weed seed into the Project area.

APM BO-3: Avoidance of and minimization of potential impacts to special-status plants.

- **Rare plant population avoidance.** To the maximum extent possible, rare plant populations will be avoided. A qualified biologist will stake an exclusion zone at the limit of work adjacent to rare plant occurrences that have been identified to date. Within 60 days after Project activities have been completed at a given worksite, all staking and flagging will be removed.

APM BO-4: General avoidance and minimization of impacts to aquatic or wetland habitat.

- **Timing and extent of work in aquatic or wetland habitat.** Work in aquatic or wetland habitat is limited to the removal of two poles and replacement of one pole in the wetland northeast of SR 246. All ground-disturbing work at this location will take place in dry conditions. The timing is dependant on seasonal rainfall; in winter 2008-2009, ground was dry even in January.

APM BO-5: Avoidance of impacts to California red-legged frog, California tiger salamander, western spade foot toad and western pond turtle in proximity to identified suitable breeding ponds or aquatic habitat.

- **Pre-construction surveys and relocation of species.** Pre-construction surveys within two weeks of start of construction at work areas within 600 feet of suitable California tiger salamander breeding habitat with small mammal burrows will be conducted by a qualified, agency-approved biologist. Pre-construction surveys within two weeks of start of construction at work areas within 300 feet of suitable California red-legged frog aquatic habitat will be conducted by a qualified, agency-approved biologist. The biologist will remove any individuals found to a location agreed upon by the USFWS and CDFG. Potential habitat for western spade foot toad and western pond turtle exists in similar locations to the California red-legged frog and California tiger salamander and potential impacts will be minimized with the implementation of this APM. Before the start of work each morning, the biologist will check under any equipment and stored constructed supplies left in the work area overnight within 600 feet of suitable habitat. All pole holes will be backfilled or covered at the end of the work day.
- **Seasonal timing restrictions.** To the extent possible, all ground-disturbing construction activities within the critical habitat and within 600 feet of suitable breeding habitat will

be limited to the period from May 1 through October 31. When ground-disturbing activities, such a pole removal, are necessary, a qualified biologist will conduct a pre-construction survey of the work area immediately preceding construction activities. All potential areas including burrows, woody debris piles, wetlands, riparian areas and edges of ponds within the work area will be thoroughly checked. Any species found will be captured and relocated to an approved location type (e.g., a small mammal burrow) within an approved area prior to the start of construction.

- **Dawn and dusk timing restrictions.** Construction activities within 600 feet of suitable aquatic habitat shall not begin prior to 30 minutes after sunrise and will cease no later than 30 minutes before sunset.
- **Minimization of burrow disturbance.** In non-ground-disturbing work areas with active burrows, plywood sheets will be used to temporarily cover burrows to minimize disturbance. When the plywood is removed, all burrow openings that were clear before the plywood was placed will be cleared.
- **Erosion control materials.** Only tightly woven netting or similar material shall be used for all geo-synthetic erosion control materials such as coir rolls and geo-textiles. No plastic monofilament matting will be used.

APM BO-6: Avoidance of and minimization of potential impacts to southwestern willow flycatcher and least Bell's vireo.

- **Avoidance of sensitive species near work areas.** Work anticipated within 300 feet of the potential nesting habitat for these species is the use of pull site P1 and insulator replacement at Poles 4, 5 and 6. Insulator replacement and use of the pull site will be restricted to the non-nesting season unless pre-construction surveys determine neither the flycatcher nor the vireo is nesting within 300 feet of the poles.

APM BO-7: Avoidance of and minimization of potential impacts to western burrowing owl.

- **Pre-construction survey.** A qualified biologist will conduct a preconstruction survey in all Project work areas that providing suitable nesting habitat (annual grasslands and pastures) for the burrowing owl habitat prior to construction. The survey will include checking for the burrowing owl and owl signs (e.g., white wash at burrow entrances). If owls are found a work area and avoidance is not feasible, a passive relocation effort (displacing the owls from the work area) may be conducted as described below, subject to the approval of the CDFG.
- **Avoidance through passive relocation.** Passive relocation of owls may occur during the non-breeding season (September 1 through January 31). Passive relocation would include installing one-way doors on the entrances of burrows. The one-way doors shall be left in for 48 hours to ensure the owls have vacated the nest site. Owls would not be relocated during the breeding season.
- **Avoidance of occupied burrows.** No work areas will be established around a known occupied burrow. No disturbance should occur within approximately 160 feet (50 meters) of occupied burrows during the non-breeding season of September 1 through January 31 or within approximately 250 feet (75 meters) during the breeding season of

February 1 through August 31. The limits of the exclusion zone in the Project work area will be clearly marked with signs, flagging and/or fencing.

APM BO-8: Avoidance of and minimization of potential impacts to song birds, raptors and other migratory bird species.

- **Minimization of disturbance through pre-construction surveys and biological monitoring during construction.** Pre-construction bird nesting surveys for pull sites or locations of pole replacement or clearing and grading activities will be conducted before work performed between February 15 and August 15. In the event an active nest is identified within 50 feet (300 feet for raptors) of the Project work area, a biological monitor will monitor the activity of the nesting birds during work to determine if construction activities are resulting in significant disturbance to the birds. To the extent possible, working in the vicinity of the nest will be avoided; however, if avoidance is not practicable, a buffer zone, as determined by a qualified biologist, will be maintained around the active nest to prevent nest abandonment.
- **Minimization of electrocution hazards.** Installation of the replacement power lines will conform to PG&E's most current version of Bird and Wildlife Protection Standards, which may include the use of insulated jumper wires and bird/animal guards.

APM BO-9: Avoidance of and minimization of potential impacts to wetlands and water resources.

- **Stormwater Pollution Prevention Plan and erosion control measures.** As described in Section 4.8, APMs WQ-1 and WQ-3, a Stormwater Pollution Prevention Plan (SWPPP) will be developed that describes sediment and hazardous materials control, fueling and equipment management practices, and other factors deemed necessary for the Project. Erosion control measures will be implemented where necessary to reduce erosion and sedimentation in wetlands, waters of the United States, and waters of the state, as well as aquatic habitat occupied by sensitive species. Erosion control measures will be monitored on a regularly scheduled basis, particularly during times of heavy rainfall. Corrective measures will be implemented in the event erosion control strategies are inadequate. Sediment/erosion control measures will be continued at the Project site until such time that soil stabilization is deemed adequate.

  Brush or other similar debris material will not be placed within any stream channel or on its banks. No Project work activity is planned within the limits of any stream channel.

4.4.4.3 Construction

At this time, construction activities with the potential for impacts include:

- Augering for and installation of 128 new light-duty steel poles
- Removal of 128 wood poles and backfilling of the holes
- Replacement of conductor
- Use of temporary work areas immediately adjacent to new and existing pole sites
- As-needed vegetation trimming and/or clearing and minimal grading along existing access roads

- Minimal tree trimming around pole locations
- Overland access, as defined in the Project description, in grassland areas to the power line route
- Work at pull and tension sites

One-for-one pole replacement of similar average diameter will not increase the permanent Project footprint (see Table 2.9-2). Permanent Project footprint within wetland habitat will be reduced with completion of the Project. Work in aquatic or wetland habitat is limited to the removal of two poles (poles 69 and 70) and replacement of one pole (Pole 69) in the wetland northeast of SR 246 (see Figure 4.4.-1). Pole 70 will be replaced approximately 35 feet northeast of its current location within the alignment as discussed in Section 2.7.3. All ground-disturbing work at this location will take place in dry conditions. The timing is dependant on seasonal rainfall; in winter 2008-2009, ground was dry even in January. Work within the critical habitat is limited eight pole work sites, one set of pull and tension sites, existing access roads, and overland access routes through grassland or agriculture field. No grading, vegetation removal or tree trimming is proposed within critical habitat, aquatic or wetland areas.

Table 4.4-1 provides the approximate acreage for each work area type within critical habitat (for southwestern willow flycatcher and California tiger salamander, respectively) that may be temporarily impacted during construction (see Figure 4.4-1). Pole work areas for Poles 4 and 5 on the west side of the Santa Ynez River are within southwestern willow flycatcher USFWS Critical Habitat. Work on these poles is limited to insulator replacement as described in Section 2.7.3.

TABLE 4.4-1
Temporary Construction Impact in Critical Habitat - Approximate Acreage
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Work Area Type in Critical Habitat	Acres of Impact (approximate)	Individual Work Area Dimensions
Existing Access Roads	1.97 acres	Approximate width of 12 feet
Overland Access Routes	0.26 acres	Approximate width of 12 feet
Pole Work Areas* (Poles 4, 5, 66, 67, 68, 69, 70, 71)	0.61 acres	Approximately 40 by 100 feet
Pull and Tension Sites (P9)	0.23 acres	Approximately 40 by 100 feet

*Work areas for Poles 4 and 5 are within southwestern willow flycatcher USFWS Critical Habitat.
All other work area acreage in table is within California tiger salamander USFWS Critical Habitat.

Table 4.4-2 provides the approximate acreage for each work area type within upland habitat of California red-legged frog and California tiger salamander that may be temporarily impacted during construction (see Appendix B-1, Figure 1). California red-legged frog upland habitat is calculated at 300 feet from California red-legged frog known and potential aquatic habitat (see Appendix B-1, Figures 1 and 2). Work areas within potential California red-legged frog upland habitat include portions of existing access roads, portions of overland access routes, three pull and tension sites, and 10 pole work areas. California tiger salamander upland habitat is calculated at 600 feet from California red-legged frog known and potential aquatic habitat (see Appendix B-1, Figures 1 and 2). Work areas within potential California tiger salamander upland habitat include portions of existing access roads, portions of overland access routes, four pull and tension sites, and 18 pole work areas. Potential habitat for western spade foot toad and western pond turtle exists in similar locations to the California red-legged frog and California tiger salamander habitat. Potential impacts to all species will be minimized with the implementation of APM BO-5.

TABLE 4.4-2
Temporary Construction Impact in Upland Habitat - Approximate Acreage
Cabrillo - Santa Ynez 115 kV Reconductoring Project

California Red-legged Frog Upland Habitat Temporary Impact	Acres of Impact (approximate)	Individual Work Area Dimensions
Existing Access Roads	0.83 acres	Approximate width of 12 feet
Overland Access Routes	0.11 acres	Approximate width of 12 feet
Pole Work Areas (Poles 31, 68, 69, 70, 72, 76, 112, 113, 114, 115)	0.77 acres	Approximately 40 by 100 feet
Pull and Tension Sites (P9, P10, and P15)	0.47 acres	Approximately 40 by 100 feet
California Tiger Salamander Upland Habitat Temporary Impact	**Acres of Impact (approximate)**	**Individual Work Area Dimensions**
Existing Access Roads	3.03 acres	Approximate width of 12 feet
Overland Access Routes	0.58 acres	Approximate width of 12 feet
Pole Work Areas Poles 33, 34, 48, 49, 68, 69, 70, 71, 81, 82, 85, 86, 89, 90, 91, 114, 115, 116	1.45 acres	Approximately 40 by 100 feet
Pull and Tension Sites P4, P9, P12, and P15	0.64 acres	Approximately 40 by 100 feet

Temporary and Permanent Impacts

Potential Impact BO-1. Potential Disturbance to California Annual Grassland, Riparian Scrub, Oak Savannah/Woodland, Coastal Sage Scrub. With implementation of APM BO-1 and APM BO-2, this potential impact is less than significant. The proposed Project will install new steel poles typically within approximately 5 feet from existing wood poles, with the exception of one pole to be relocated out of a wetland area. Temporary disturbance to these habitats are routine along the alignment during maintenance and operation of the existing power line. Project activities are expected to be largely confined to previously disturbed areas, including existing access roads and clearings around existing pole sites. Minimal grading and vegetation clearing is expected to occur along existing access roads, overland routes, and in some pole locations to reestablish access (see Figure 2.6-1 for locations of grading and vegetation work). Some localized trimming of shrubs and trees growing within the temporary work areas at poles sites will be necessary to allow access.

Construction activities will avoid sensitive areas such as riparian woodland and scrub habitat found in the Project area (e.g., Santa Ynez River). Poles adjacent to the river will only have the insulators replaced.

Temporary disturbance of annual grassland, oak woodland, and coastal sage scrub will result from clearing activities, augering for new poles and other disturbance within temporary work areas. These habitats are common throughout the region and the small amount of temporarily disturbed areas is a less than significant impact. The existing poles will be removed, the holes back-filled and re-growth from surrounding vegetation is expected. No permanent impact will occur since pole diameters will not increase.

Potential Impact BO-2. Disturbance of Seasonal Emergent Wetlands. With implementation of APM BO-1, APM BO-2 and APM BO-9, this potential impact is less than significant. The Project has avoided impacts to wetlands and waters where feasible. Wetland impacts to seasonal wetlands will be limited to disturbance within the seasonal wetland northeast of SR 246. Two existing wood poles located within the wetland will be removed. One replacement pole will be located in the wetland area. The second pole will be relocated out of the wetland area as discussed in Section 2.7.2. Placement of the western pole will result in a permanent loss of wetland habitat; however, the two existing poles will be removed from the same wetland habitat. The removal of the two existing wood poles will have a minor temporary impact to the aquatic habitat. Indirect effects have the potential to occur if hazardous materials (e.g., oils and fuels) or sediment-laden water was accidentally released into wetlands. With implementation of APM BO-1, BO-2, and APM BO-9, the potential impacts will be minimized to a less than significant level. After the poles are removed, the resulting holes will be backfilled with soil. Pole removal will result in a negligible net increase in the acreage of aquatic habitat (approximately 2 square feet). With implementation of other APMs for special-status aquatic wildlife species, impacts to aquatic habitat is considered less than significant.

Potential Impact BO-3. Potential Impacts to Special-Status Plant Species. With implementation of APM BO-1 through APM BO-3, this potential impact is less than significant. Four special-status species were observed within the planned work areas during the first and second surveys. Work areas near poles 97, 106-108, 111, 116 and 121 will be flagged to avoid known special status plant populations (see Appendix B-2). Should new populations be found during summer surveys, work areas will be evaluated and adjusted where possible and/or avoidance flagging will be planned. Construction activities have the potential to impact special-status plant species that may be found in the Project area. With implementation of APM BO-1 through APM BO-3, potential impacts to any special-status plant species will be minimized to a less than significant level.

Potential Impact BO-4. Potential Disturbance of California Red-legged Frog, California Tiger Salamander, Western Pond Turtle and Spadefoot Toad. With implementation of APM BO-1, APM BO-4, and APM BO-5 this potential impact is less than significant. Suitable habitat for these species is known to exist at the wetlands northeast of SR 246. Other suitable ponds and wetland areas occur within the Project area (see Appendix B-1, Figure 1). Therefore, construction activities and pole placement in the vicinity of stock ponds, permanent seeps, drainage crossings, migration corridors, and aestivation habitat could potentially disturb or remove habitat occupied or potentially occupied by these species.

Construction activities have the potential for direct "take" of eggs, tadpoles, juveniles, and adults. With implementation of APM BO-1, APM BO-4, and APM BO-5, this potential impact is minimized to a less than significant level.

Potential Impact BO-5. Potential Disturbance of Southwestern Willow Flycatcher and Least Bell's Vireo. With implementation of APM BO-1, APM BO-4 and APM BO-6, this potential impact is less than significant. The southwestern willow flycatcher and least Bell's vireo are riparian obligate species that share very similar habitat requirements. Both species have been known to nest in the riparian habitat found along the Santa Ynez River, and thus the Project area could support breeding by these species. The narrow riparian habitat adjacent to Santa Rosa Creek could potentially support these species. No riparian habitat would be impacted by the Project. With implementation of APM BO-1, APM BO-4, and APM BO-6, this potential impact is minimized to a less than significant level.

Potential Impact BO-6. Potential Disturbance of Western Burrowing Owl. With implementation of APM BO-1, APM BO-4 and APM BO-7, this potential impact is less than significant. Construction activities have the potential to disturb or harm nesting burrowing owls in or near the Project area should any be present. With implementation of APM BO-1 APM BO-4 and APM BO-7, potential impacts to burrowing owls will be minimized to a less than significant level.

Potential Impact BO-7. Potential Interruption of Breeding and Nesting Activities of Song Birds, Raptors and other Migratory Bird Species. With implementation of APM BO-1 APM BO-4 and APM BO-8, this potential impact is less than significant. Potential impacts to avian species resulting from the Project include the potential for disruption of nesting, if present, and the temporary disturbance of suitable habitat. Nearby suitable habitat may be indirectly impacted by human disturbance or incidental intrusion by construction personnel or equipment. Sensitive species such as the burrowing owl, as well as common raptors such as the red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*), and avian species listed in Section 4.4.3.2 could abandon nesting activity if disturbed during the breeding season.

Construction activities near an active nest have the potential to impact nesting behavior of species covered under the MBTA. Species include all raptors, migratory waterfowl, shorebirds, passerines, and other sensitive bird species within the Project area.

The potential for impact to nesting activities exists if avian species move into the construction zone during nesting season prior to the start of construction or during construction. With implementation of APM BO-1, APM BO-4, and APM BO-8, the potential impact to occupied habitat is minimized to a less than significant level.

Potential Impact BO-8. Potential disturbance to American Badgers. With implementation of APM BO-1 and APM BO-4, this potential impact is less than significant. American badger have been observed on roadways in the vicinity including one at Campbell Road. Suitable denning habitat occurs throughout much of the Project area. Construction activities have the potential to disturb this species if they occur near an occupied den. With the implementation of mitigation measures APM BO-1, APM BO-4, and APM BO-9, impacts to this species would be less than significant.

Potential Impact BO-9. Temporary Disturbance of Grassland, Oak Woodland, and Coastal Scrub Foraging Habitat. **Temporary loss of these habitats due to the use of temporary work areas would be a less than significant impact because the area would naturally re-vegetate; thus mitigation is not required.** The temporary and localized disturbance of small areas of habitat is expected to be a less than significant impact because of the extensive amount of similar adjacent habitat available throughout the Project area and surrounding vicinity.

Potential Impact BO-10. Potential Displacement of Wildlife during Project Construction. **This would be a less than significant impact because of the abundance of suitable adjacent habitat and limited construction activity duration at any one location.** Noise and activity associated with use of access roads and construction and installation of power poles during the non-breeding season could disturb sensitive species and cause them to temporarily disperse from and avoid the construction area. Interruption of breeding/denning/roosting activities of special-status mammals could occur if Project construction disturbs occupied habitat or result in the displacement of mammals. This would be a less than significant impact because of the abundance of suitable adjacent habitat and limited construction activity duration at any one location.

4.4.4.4 Operation and Maintenance

The Project entails reconductoring, where existing wood poles and conductor will be replaced with steel poles and larger gage wire. The new equipment will be installed along the existing power line route, therefore not introducing an unfamiliar potential collision hazard to avian species. As a result, Project impacts due to collisions with the upgraded equipment are not expected to occur; therefore, mitigation is not required.

Operation and maintenance for the proposed Project will not change from the existing conditions. Potential impacts are not expected; mitigation is not needed.

4.4.5 Works Cited

Arnold, Richard. 2009. Personal communication regarding Lompoc grasshopper in the Lompoc area. Entomologist with Entomological Consulting Services Limited. Email correspondence June 25, 29, 2009.

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines.

California Department of Fish and Game (CDFG). 2008a. Special Animals. California Natural Diversity Database. February.

_________. 2008b. California Wildlife Habitat Relationships System. Electronic database. California Interagency Wildlife Task Group. Sacramento, CA. Special Animals.

_________. 2009. Natural Diversity Database (RareFind3, version 3.0.5). Electronic database. Sacramento, CA.

California Native Plant Society (CNPS). 2009. Inventory of rare and endangered plants of California (online edition, v7-09a). Accessed at: http://www.cnps.web.aplus.net/cgi-bin/inv/inventory.cgi

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss. Online Version Available at: http://www.wetlands.com/regs/tlpge02e.htm.

Garcia and Associates (GANDA). 2009. *Biological Resources Technical Report for the Cabrillo-Santa Ynez 115 kV Reconductoring Project.* June.

Gevirz, E., T. Olson, M. Carroll, P. Collins, K. Burton, and A. Nelson. 2005. Ecosystem characterization of La Purisima Mission State Historic Park. Prepared for California Department of Parks and Recreation.

Holland, R. F. 1986. *Preliminary descriptions of the terrestrial natural communities of California.* California Department of Fish and Game. Unpublished report.

Jennings, M.R. and M.P. Hayes. 1994. *Amphibian and reptile species of special concern in California*. California Department of Fish and Game, Sacramento, CA.

National Audubon Society 2009. Important Bird Areas in the U.S. Available at http://www.audubon.org/bird/iba 01/2009.

Olson, T. 2009. Personal communication regarding results of wetland surveys for the Caltrans State SR 246 Project and local bird surveys conducted for the Lompoc Wind Energy Project. Wildlife biologist with Garcia and Associates, Lompoc, California Office.

Sawyer, J. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society, Sacramento, CA.

Sweet, S. 1992. *Initial report on the ecology and status of the arroyo toad on the Los Padres National Forest, southern California, with management recommendations.* Prepared for the U. S. Forest Service, Los Padres National Forest, Goleta, CA.

United States. Army Corps of Engineers (USACE) 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*. U.S. Army Corps of Engineers Engineer Research and Development Center ERDC/EL TR-08-28.

4.5 Cultural Resources

4.5.1 Introduction

This section describes existing conditions in the Project area as they relate to cultural resources, analyzes potential impacts to these resources from the Project and concludes that any impacts will be less than significant with mitigation. The following significance criteria derived from the CEQA Checklist summarize the significance of the potential impacts to cultural resources.

IV. CULTURAL RESOURCES -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	❒	❒	☒	❒
b) Cause a substantial adverse change in the significance of a unique archaeological resource as defined in §15064.5?	❒	❒	❒	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	❒	❒	☒
c) Disturb any human remains, including those interred outside of formal cemeteries?	❒	❒	❒	☒

By implementing the APMs regarding cultural resources (see Section 4.5.4.2 below), Project impacts will be less than significant.

4.5.2 Methodology

Applied EarthWorks, Inc. (Æ) completed the cultural resources impact assessment for the Project. The assessment included records searches and background research, consultation with Native American tribal representatives and other interested parties, and field inspections of the Project area.

On September 5, 2008, Æ obtained a records search from the Central Coastal Information Center of the California Historical Resources Information System, at the University of California, Santa Barbara. Information Center staff examined site record files, location maps, and other materials to identify previously recorded resources and prior surveys within 0.25 mile of the power line. Data sources also included the Historic Property Data File, the National Register of Historic Places, the California Register of Historical Resources, the listing of California Historical Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest.

On September 19, 2008, Æ contacted the Native American Heritage Commission (NAHC) in Sacramento to determine if any sites recorded in the Commission's Sacred Lands Inventory occur in or near the Project area. In their response, the NAHC supplied al list of local Native American tribal representatives with interests in and knowledge about the area. Those included on the list were contacted by letter and telephone to inform them of Project details and request comments or information about the Project area.

Between September 2008 and June 2009, Æ conducted intensive pedestrian surveys of the entire 14.6-mile Cabrillo–Santa Ynez 115 kV Power Line to identify any archaeological or historical resources that may be impacted by the Project. During these surveys, archaeologists inspected the alignment along the length of the power line. In addition to the power line corridor itself, Æ also inspected the following ancillary areas to ensure they identified any cultural resources that might be impacted by the Project:

- 300-foot buffer zones around Cabrillo Substation and Santa Ynez Switching Station to accommodate Project staging areas;
- 100-foot buffer zones around 10 guard structure locations;
- 100-foot buffer zones around 11 poles originally thought to be pulling/tensioning sites;
- 40 x 100-foot blocks around 15 additional pulling/tensioning sites;
- three potential lay down areas for helicopter access (200 by 200 feet each);
- 4.18 miles of proposed overland access routes; and
- portions of existing access roads (totaling .68 miles) that will be reestablished for vehicle use through vegetation management and minimal grading.

4.5.3 Existing Conditions

4.5.3.1 Regulatory Background

Several state preservation laws guide actions that concern cultural resources. These include CEQA (Public Resources Code 21000 et seq.), Public Health and Safety Code (HSC), and Public Resources Code. At the local level, both the County of Santa Barbara and City of Lompoc require protection of archaeological and historical resources to the greatest extent feasible. Although this public utility project is not subject to local land use and planning regulations, information on local plans and cultural resource policies is included for purposes of CEQA review.

Federal

There are no federal regulations applicable to the Project related to cultural resources.

State

In Section 21084.1 of the Public Resources Code, CEQA equates a substantial adverse change in the significance of a historical resource with a significant effect on the environment. "Historical resources" include archaeological and historical sites listed in or eligible for listing in the California Register of Historical Resources (CRHR) and, by reference, the National Register of Historic Places (NRHP), California Historical Landmarks, Points of Historical Interest, and local registers of historical resources. A local register is broadly defined in Public Resources Code Section 5020.1(k) as "a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution." Local registers come in two forms: (1) surveys of historic resources conducted by a local agency in accordance with Office of Historic Preservation procedures and standards, adopted by the local agency and maintained as current; and (2) landmarks designated under local ordinances or resolutions (Public Resources Code Sections 5024.1, 21804.1, 15064.5).

Any resource listed in, or eligible for listing in, one of these registers or inventories is presumed to be historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources, or identified in an historical resources survey, does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Section 15064.5(a)(3) of the CEQA Guidelines (as amended) states that a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (CRHR) (Pub. Res. Code §§5024.1, Title 14 CCR, Section 4852). Criteria of eligibility for the CRHR include the following:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A substantial adverse change is demolition, destruction, relocation, or alteration that would impair historical significance (Section 5020.1). Section 21084.1 requires treatment of any substantial adverse change in the significance of a historical resource as a significant effect on the environment. According to State CEQA Guidelines § 15126.4(b)(3), public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource. Preservation in place is the preferred manner of mitigating impacts [14 CCR 15126.4(b)(3)]. Preservation in place may be accomplished by planning construction to avoid the resource, incorporating sites within parks or open space, covering sites with chemically stable and culturally sterile fill, or deeding the site into a permanent conservation easement. For buildings and structures, maintenance, repair, restoration, preservation, conservation, or reconstruction consistent with the *Secretary of Interior's Standards and Guidelines for the Treatment of Historic Properties* is considered mitigation of impacts to a less than significant level (14 CCR 15126.4(b)(1)). Documentation of an historical resource, however, will not mitigate the effects of demolition to a less than significant level [14 CCR 15126.4(b)(2)]. When data recovery excavation of an archaeological site is the only feasible mitigation, a detailed data recovery plan must be prepared and adopted prior to any excavation.

Codes Governing Human Remains

The disposition of human remains is governed by Section 7050.5 of the California HSC and Sections 5097.94 and 5097.98 of the Public Resources Code, and falls within the jurisdiction of the Native American Heritage Commission (NAHC). If human remains are discovered, the County Coroner must be notified immediately and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native Americans so they can inspect the burial site and make recommendations for treatment or disposal.

County of Santa Barbara Cultural Resource Guidelines

According to the Santa Barbara County Historic Preservation Ordinance, in order for a resource to be eligible for designation as a County Landmark or Place of Historic Merit, it must meet the designation criteria defined in Section 18A-3 of the Santa Barbara County Municipal Code.

> The historic landmarks advisory commission when considering a proposal to designate any place, site, building, structure, or object as a place of historic merit or landmark, and the board of supervisors when considering a recommendation to designate a landmark, shall use the following criteria:
>
> (a) It exemplifies or reflects special elements of the county's cultural, social, economic, political, archaeological, aesthetic, engineering, architectural or natural history; and/or
>
> (b) It is identified with persons or events significant in local, state or national history; and/or
>
> (c) It embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship; and/or
>
> (d) It is representative of the work of a notable builder, designer, or architect; and/or
>
> (e) It contributes to the significance of a historic area, being a geographically definable area possessing a concentration of historic, prehistoric, archaeological, or scenic properties, or thematically related grouping of properties, which contribute to each other and are unified aesthetically by plan or physical development; and/or
>
> (f) It has a location with unique physical characteristics or is a view or vista representing an established and familiar visual feature of a neighborhood, community, or the County of Santa Barbara; and/or
>
> (g) It embodies elements of architectural design, detail, materials, or craftsmanship that represent a significant structural or architectural achievement or innovation; and/or
>
> (h) It reflects significant geographical patterns, including those associated with different eras of settlement and growth, particularly transportation modes or distinctive examples of park or community planning; and/or

(i) It is one of the few remaining examples in the county, region, state, or nation possessing distinguishing characteristics of an architectural or historical type or specimen.

The Commission shall have bylaws which provide additional guidance on eligibility for establishing landmarks and places of historic merit. (Ord. No. 4425, § 1)

City of Lompoc Cultural Resource Guidelines

The Resource Management Element of the Lompoc General Plan, adopted in 1997, provides the framework for protection and preservation of the City's cultural resources. It states in Goal 3 that the City shall "Protect cultural resources in recognition of their aesthetic, educational, cultural, and scientific values," and enacts the following policies:

- Policy 3.1: The City shall promote rehabilitation of residences and structures with historic or architectural value.
- Policy 3.2: The City shall encourage owners of historic structures or places to request federal, state, county, or City landmark status.
- Policy 3.3: The City shall use the Archeological Sensitivity Zones map to determine the type and extent of archeological resource evaluation necessary for development projects.
- Policy 3.4: The City shall protect significant archeological resources for the enjoyment and edification of future generations.
- Policy 3.5: The City shall support efforts by public and nonprofit organizations to acquire properties adjacent to the Mission Vieja de la Purisima site and La Purisima Mission State Historical Park in order to facilitate protection of these resources.
- Policy 3.6: The City shall continue support of the Lompoc Museum.
- Policy 3.7: The City shall continue to encourage local organizations (e.g. Lompoc Valley Historical Society) to place plaques at historic places and to provide displays, programs, and events that highlight Lompoc's historic heritage.
- Policy 3.8: As required by CEQA, the City shall continue cultural resource investigations as part of the environmental review for all development projects. [Final EIR Cultural Resources Mitigation Measure1a]
- Policy 3.9: The City shall use the "California Comprehensive Heritage Resources Management Plan" guidelines and standards for administering cultural resource investigations. The plan provides guidance with respect to: Research design criteria; Evaluation of cultural resources using the three phased methodology noted in Section 6.2 of the Cultural Resources Study; Archiving cultural resource materials; and professional qualifications for cultural resource investigators, including individuals qualified for membership in the Society of Professional Archeologists. [Final EIR Cultural Resources Mitigation Measure 1b]
- Policy 3.10: The City shall use local specialists in the management of the area's cultural resources. This position could be used on a part-time basis to assist the City with project reviews, surveys for in-house projects, evaluation of cultural resource reports, and to

provide advice on a variety of cultural resource matters. In addition, the assistance and advice of local Chumash Indian Native American specialists, Lompoc Museum Associates and staff, Lompoc Valley Historical Society, Lompoc Advisory Landmark Committee, and other heritage-minded organizations and individuals shall be solicited as needed. [Final EIR Cultural Resources Mitigation Measure 1c]

- Policy 3.11: The City shall support efforts by public and nonprofit organizations to acquire properties adjacent to the Mission Vieja de la Purisima site and La Purisima Mission State Historical Park in order to facilitate protection of archaeological resources. [Final EIR Cultural Resources Mitigation Measure 1h].

In 2006 the City adopted Ordinance No. 1521 which establishes a Cultural Resources Overlay District for the City's Zoning Map, an area "located south of the centerline of Olive Avenue and its extrapolation to the east, between "V" Street and Highway 1." The district will aid in ensuring the protection of cultural resources in the City while streamlining the process of development review within the Archaeological High Sensitivity Zone on the City's south side, as identified on the Archaeological Sensitivity Zones Map in the Resource Management Element of the Lompoc General Plan. The Cultural Resource Overlay District and Archaeological High Sensitivity Zone both encompass the historic Mission Vieja, a portion of which is listed on the National Register of Historic Places (Site#78000775) and is identified as State Historical Landmark No. 928. None of the current Project elements are located with the City's Cultural Resources Overlay District.

4.5.3.2 Environmental Setting

Prehistory and Archaeology

Archaeologists have studied the prehistory of Santa Barbara County for many years. Most of this research has concentrated on the Santa Barbara Channel region, where the Barbareño Chumash developed a highly complex social system during late prehistory. To the north, Vandenberg Air Force Base has seen substantial archaeological research. Based on this research, the broad patterns of cultural change applicable to the Project area are described below.

The Early Holocene (circa 8000–6000 B.C.) has been described as a period of low population density, simple technology, and egalitarian social organization (Erlandson 1994). During this time people appear to have subsisted largely on plants, shellfish, and some vertebrate species. The subsequent period (6000–1400 B.C.), referred to as the Early Period by King (1990), is distinguished from the Early Holocene by technological changes, the most important being the addition of *manos* and *metates* (handstones and milling slabs) to the tool kit, probably indicating a greater reliance on hard seeds from the chaparral plant community. Toward the end of the Early Period mortars and pestles were added to the artifact inventory, probably indicating systematic exploitation of acorns (Glassow and Wilcoxon 1988).

Technological innovations during the Middle Period (1400 B.C.–A.D. 1150) included development of the *tomol* (plank canoe) and most of the sophisticated fishing technology used until historic times. These served to alter subsistence and social organization. The *tomol* was utilized by the Chumash south of Point Conception where ocean conditions were more favorable, and it allowed for a greater reliance on marine resources, particularly fish, for food. There is some evidence for increasing population size during the Middle and Late periods, but no rigorous estimates of population size or density have been developed.

Social complexity became more noticeable during the Middle to Late Period transition (A.D. 1150–1300), when most archaeologists believe craft specialization and social ranking developed (Arnold 1992). However, these changes are again more noticeable south of Point Conception and may have been due, in part, to environmental changes that occurred at that time. By the Late Period (A.D. 1300–1782), the Chumash culture was probably very similar to what the Spanish observed when they arrived. The southern Chumash had developed a complex religious, social, and economic system. There are few records of Spanish encounters with the Chumash north of Point Conception (Glassow 1990). However, it appears that the absence of the *tomol* and a lower population density contributed to a different social and political organization from their neighbors to the south.

The prehistory of the Project area, and the Santa Ynez River valley in general, is as yet poorly understood. Although early sites are found in the lower Santa Ynez River valley (Woodman et al. 1991; Lebow et a,. 2001, 2002), there is only limited evidence for Early Period occupation of the Project vicinity. McKim et al. (1996) found a deposit at CA-SBA-3387 along Zaca Creek north of Buellton that suggests early occupation, but site integrity was poor and the assemblage quite limited. More substantial Early Period sites are located at CA-SBA-2707 near Solvang (Price et al. 2006) and CA-SBA-2203/H in the upper Santa Ynez River valley along State Route 154 (Mikkelsen and Jones 1998). Both of these sites produced large collections of milling stones and other tools.

Archaeological investigations to date indicate that populations increased and land use intensified during the Middle and Late periods. Most permanent settlements seem to be located along the terraces of the Santa Ynez River, while sites located toward the interior tend to be short-term intermittently occupied camps.

Ethnography

The Project lies within the ethnographic territory of the Chumash, one of the most populous and socially complex Native American groups in California. Chumash is a name derived from traditional Barbareño Chumash language that is used by anthropologists to refer to several closely related groups of Native Americans that spoke seven similar languages. The Chumash people lived between Malibu in Los Angeles County and the Monterey County line, on the northern Channel Islands, and east as far as the edge of Kern County.

The Chumash people lived in large villages along the Santa Barbara Channel coast, with less dense populations in the interior regions, on the Channel Islands, and in coastal areas north of Point Conception. Population density was unusually high for a nonagricultural group; some villages may have had as many as 1,000 people (Keeley 1988). Inland groups are thought to have had lower population densities and greater seasonal mobility than coastal groups (Landberg 1965). Subsistence was focused on fishing, hunting, and gathering native plants, particularly acorns, although many animals and dozens of plants were used for food. Acorns and stored food were emphasized during the winter; tubers, grass seeds, and bulbs during the spring. Fishing was best in late summer and early fall, and hunting was best in spring, summer, and fall (Landberg 1965:102–114). Chumash people engaged in craft and occupational specialization, and maintained regional trade and religious systems that tied many villages together. Leadership was hereditary, and some chiefs had influence over several villages, indicating a simple chiefdom level of social organization (Arnold 1992; Johnson 1988).

Chumash territory has been divided into sections representing seven linguistic subgroups (Kroeber 1925). The Project area lies principally in the territory of the Purisimeño, who occupied the Santa Ynez River watershed from the coast inland to the vicinity of Buellton. The neighboring Ynezeño held territory from about the mouth of Zaca Creek eastward (Glassow 1979:155). However, it is not entirely clear how closely these presumed territorial divisions match the pre-mission tribal territories. Kroeber himself noted that there is limited information about the geographical limits of the dialects and admitted that his boundaries are based more on topography (Kroeber 1925:552). Waechter (1999:8) argues that the territorial divisions may correspond more to catchment areas of the missions for which the groups were named rather than the groups' actual native territory. More recent interpretations of Chumash ethnogeography by Glasssow (1979) and Horne (1981) place the territorial boundary between the Ynezeño and the Purisimeño 24 kilometers east of Kroeber's (1925) boundary, closer to Buellton (Waechter 1999:8).

The known ethnographic village nearest the Project area is *Jonjonata*, which has been associated with archaeological site CA-SBA-3404, located along Zaca Creek a short distance north of Santa Ynez Switching Station (Hildebrandt 1999). At the opposite end of the Project area, several Purísimeño villages were located in the Lompoc Valley, and it is likely that the original La Purisima Mission (Mission Vieja) was established in 1787 in the general vicinity of these settlements (King 1975, 1984; Spanne 1988; Applegate 1975; Ruth 1936). The site of *Lompo'* has not been specifically identified but was probably located just west of the current city, while *Sipuc* was located to the east at the big bend or elbow in the Santa Ynez River. *Alsacupi* (also known as *Algsacupi* or *Laxsakupi*) was a large settlement at the mouth of Miguelito Canyon that became the principal Chumash village after establishment of the original mission close by. The village *Amu'u* was located across Lompoc Valley in Los Berros Canyon, at the new mission site established after the original mission was destroyed by earthquake in 1812.

Despite the distance to the sea, estuary clams, fish bone, and seal bone have been found at interior archaeological sites along the Santa Ynez River (Colten 1994; Macko 1983:81–84), suggesting trade in marine resources or travel to the coast to obtain these resources (Landberg 1965). Several authors have presented models of interior Chumash settlement systems (Glassow 1979; Spanne 1975; Tainter 1971, 1972, 1975), but little quantified data on prehistoric subsistence are available from that region.

In summary, the Chumash were hunter-gatherer-fishers who relied on a variety of resources for subsistence and raw materials. There was considerable seasonal and regional variability in land use, settlement, and subsistence practices across Chumash territory; people who lived near the coast focused animal procurement activities on the marine environment, while those north of Point Conception and in the interior regions were more terrestrially focused. Trade or acquisition of various resources through expeditions was a regular occurrence, and animal remains and lithic raw materials are often found in archaeological sites at some distance from their sources.

History

At the most general level, Project area history can be divided into three eras reflecting Spanish, Mexican, and United States governance. Beginning in 1769, the Spanish established 21 missions between San Diego and Sonoma, settling a narrow strip along the coast but rarely venturing into the interior. The current Project is in the vicinity of two of the missions: La Purísima Concepción in Lompoc and Santa Inés in Solvang.

Fermin Lasuen, second *Presidente* of the Franciscan missions of California (replacing Junipero Serra in 1785), established the eleventh mission in Alta California in Lompoc Valley in 1787. *Mision de la Purisima Concepción de Maria Santisima* grew slowly but steadily at the mouth of Miguelito Canyon until a violent earthquake on December 21, 1812, destroyed many of the buildings and made most others unusable. Heavy rains, mudslides, and the relative isolation of the site south of the Santa Ynez River and some distance from *El Camino Real* prompted the padres to relocate the mission five miles to the northwest, on more level ground above the floodplain on the opposite side of the river.

California became a Mexican territory in 1822 after Mexico won its independence from Spain. Over the next 20 years, mission lands were gradually transferred to private ownership via a system of land grants, and sheep and cattle ranching became the primary economic activities. After secularization of the missions, the Buellton/Solvang area became part of Rancho San Carlos de Jonata, which was granted to José Covarubias and Joaquin Carrillo in 1845 and covered more than 26,600 acres (Storke 1891) between the coast and Mission Santa Inés, and from the middle of the Santa Ynez River north to US 101. Rancho Santa Rosa, another large grant in the Project area, was centered in the Lompoc area. It was awarded in 1839 to Francisco Cota, a former corporal at the Santa Barbara Presidio. He established the boundary in 1842 and successfully expanded the ranch to 15,500 acres in 1845 (Becker 1964:287).

As Jedediah Smith, John C. Fremont, and other American trappers and explorers brought news of California's favorable climate and bountiful resources eastward, the United States government began to view California as part of its Manifest Destiny. Although the Mexican government decreed that Californios could not trade with foreigners, a thriving trade had developed between the California ranchos and New England; Californios sent tallow, hides, furs, and other local goods eastward in exchange for the manufactured wares of the east. The Mexican government, in a state of almost perpetual civil war, was powerless to stop the steady stream of immigrants from the east. Embroiled in the war for Texas independence, Mexico was in no position to defend California. Conflicts between the Californios and the central government in Mexico City led to a series of uprisings culminating in the Bear Flag Revolt of June 1846. However, Mexican control of California had effectively ended the year before when the Californios expelled Manuel Micheltorena, the last Mexican governor.

American newspapers began to clamor for the United States to acquire California. President James K. Polk had hoped to purchase the territory but ultimately was forced to sign a declaration of war against Mexico. With the signing of the Treaty of Guadalupe-Hidalgo on February 2, 1848, California became an American territory. Two years later, on September 9, 1850, California joined the United States of America as the thirty-first state.

The ranchos prospered during the California gold rush and early years of statehood due to the influx of settlers elsewhere in the state and increased demand for beef. However, the ranchos were hit hard during the droughts of 1860–1864, which changed the face of cattle ranching across California and left less than 5,000 cattle alive in Santa Barbara County. By 1864, 90 percent of the southern California ranchos were mortgaged and in delinquency for tax payments.

The decimation of cattle coincided with the onset of the Civil War, which brought about a shift in Santa Barbara County's grazing industry. Increased demand for wool during the war encouraged the introduction of sheep into the county. These animals required less water and forage than cattle and helped to rebuild the region's livestock operations. William W. Hollister, Thomas Dibblee, and Joseph Cooper formed an important partnership during this time that was responsible for much of the post-drought grazing renaissance. The three acquired 193,000 acres, including the Lompoc, Mission Vieja, Las Cruces, Refugio, Salsipuedes, and San Julian ranchos. The partnership dissolved in 1873, and the men split the western and northern sections of the land grants. They sold the western portion to the Lompoc Land Company, who undertook the settlement of 43,000 acres in the Lompoc Valley as a temperance colony. The city was incorporated on August 13, 1888 (City of Lompoc 2008).

Rufus T. ("R. T.") Buell, along with his brother Alonzo, bought 17,000 acres of the Rancho San Carlos de Jonata at the eastern end of the valley and began raising cattle. R. T. bought out his brother's portion of the ranch in 1872. The Buell Ranch operated as a successful horse and cattle operation and dairy farm. Buell continued to develop the property and eventually there was a "virtual town within the ranch" (Cragg 2006) complete with general store, schoolhouse, blacksmith shop, and bunkhouses (Ward 2007). The ranch prospered until the drought of 1876–1877, when Buell had to sell 11,000 acres of the ranch (Buellton Chamber of Commerce 2008).

Part of the former Buell Ranch acreage became the community of Solvang, established in 1910 by a group of Danish educators from the Midwest. They purchased 9,000 acres and developed a place that Americans of Danish descent and immigrant Danes could settle and build. The settlers ranched and farmed the land while maintaining crafts and customs of their homeland. Traditional Danish architecture was used to build the town. Atterdag College, built in 1914, served as a folk school.

Construction of the Santa Ynez River Bridge in 1918 extended the Coast Highway (now US 101) through the Buell Ranch and prompted establishment of the town of Buellton in that year. Buellton developed into a service community with motels, diners, and service stations to meet the needs of highway travelers. William Budd opened Buellton's first official U.S. post office in 1920 (Ward 2007); however, the city did not become fully incorporated until 1992.

Agriculture always has been at the heart of the regional economy, with livestock (cattle and sheep) ultimately giving way to major crops of grain, vegetables, and flowers. The flower seed industry so dominated agricultural production that the area was dubbed the "*Valley of Flowers*" (Lompoc Valley Historical Society 2008). Other important economic influences include mining of diatomaceous earth in the south hills and development of Vandenberg Air Force Base at the west end of the valley.

4.5.3.3 Records Search Results

The Central Coast Information Center identified 28 prior cultural resources investigations within 0.25 mile of the Project corridor (Table 4.5-1). Most of these are small surveys related to residential property development, power lines, bridge replacements or other highway projects, or similar projects of limited scope. One large area survey (Van Horn 1979) encompassed the entire western half of the power line corridor but was an overview and did not include a field survey. Most of the prior survey coverage is at the eastern and western ends of the corridor. Generally, most of the power line had not been surveyed previously.

TABLE 4.5-1
Previous Cultural Resource Studies and Previously Identified Resources within 0.25 Mile of the Cabrillo–Santa Ynez Power Line
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Report No.[a]	Date	Author(s)	Title	Results
E-275	1977	Meacham, C.	An Archaeological Survey of a Proposed Disposal Site, 05201-910002, 05-SB-246, P.M. 9.5	Negative
E-276	1977	Meacham, C.	An Archaeological Survey of a Proposed Bridge Replacement and Shoulder Improvement, 05-SB-246, P.M. 9.5/11.2, 05201-220611	Negative
E-281	1981	Osland, K.	An Archaeological Survey of the East End of the Robinson Bridge over the Santa Ynez River near Lompoc	No resources within 0.25 mile
E-291	1982	Spanne, L.	Archaeological Survey of the Hauenstein Property (APN-83-080-17) in Lompoc, California	CA-SBA-1751
E-343	1979	Van Horn, D.	An Overview of Potential Impacts to Cultural Resources Resulting from Proposed Alternative Transmission Lines Serving the LNG Facility at Point Conception, California	No resources within 0.25 mile
E-588	1983	Wilcoxon, L.	A Phase I Cultural Resources Evaluation for Texaco's Skytt Well No. 2, Santa Barbara County, California	Negative
E-809	1976	Clewlow, C.	Archaeological Resources along the Proposed LNG Gas Transmission Pipeline from Point Conception to Arvin, and Arvin to El Cajon, California	No resources within 0.25 mile
E-959	1984	MacFarlane, H.	Final Report: Archaeology Survey, Farm House Project, Proposed Greenhouse, Lompoc, California	Positive–unrecorded sites
E-963	1988	Waldron, W.	Caltrans proposal to widen Route 1/246/12th St., Lompoc, Santa Barbara County, California	Negative
E-1113	1966	Anthropology Department, UCLA	An Archaeological Reconnaissance of Lands within the Boundary of a Proposed Bureau of Reclamation Reservoir near the City of Lompoc, Santa Barbara County, California	No resources within 0.25 mile
E-1219	1991	Wilcoxon, L.; Imwalle, M.	A Phase I Cultural Resource Evaluation for a Portion of Lot 1, Phase II, Jonata Spring Ranch, Santa Barbara County, California	Negative
E-1220	1991	Spanne, L.	Phase I Archaeological Survey Report for Assessor's Parcel Number 99-430-19 (TPM No. 14,236), Vicinity of Buellton, California, County of Santa Barbara	Negative

TABLE 4.5-1
Previous Cultural Resource Studies and Previously Identified Resources within 0.25 Mile of the Cabrillo–Santa Ynez Power Line
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Report No.[a]	Date	Author(s)	Title	Results
E-1221	1991	Spanne, L.	Phase I Archaeological Survey Report for Assessor's Parcel Number 99-430-18, Vicinity of Buellton, California, County of Santa Barbara	Negative
E-1361	1992	Spanne, L.	Phase I Archaeological Survey Report for Assessor's Parcel Numbers 99-220-19 and 99-230-12 (TPM No. 14,252), Vicinity of Buellton, California	Negative
E-1434	1991	Wilcoxon, L.	A Phase I Cultural Resource Evaluation for the Jonata Spring Ranch Bridle Trail Network, Santa Barbara County, California	Negative
E-1499	1993	Spanne, L.	Phase 1 Archaeological Survey Report for Assessor's Parcel No. 99-140-40.	Negative
E-1604	1992	Gibson, R.; Parsons, J.	Results of Phase One Archaeological Surface Survey for the Mission Oaks Ranch Project near Buellton, Santa Barbara County, California	CA-SBA-2639
E-1790	1995	Santoro, L.	Phase I Archaeological Investigation, 449 Bluebird Glen Lot 4 (Phase II), Jonata Springs Ranch, APN#99-430-29, Buellton, Santa Barbara County, California	Negative
E-1792	1995	Santoro, L.	Phase I Archaeological Investigation at 1357 Rolling Meadow Lane, Lot 23 (Phase II), Jonata Springs Ranch, APN 099-430-048, Buellton, Santa Barbara County, California	Negative
E-1910	1996	McKim, R.; Price, B.	Archaeological Survey Report for the Jonata Park Road Bridges Replacement Project, Santa Barbara County, California	CA-SBA-3387
E-2113	1966	UCLA Dept. of Anthropology	Archaeological Reconnaissance of Lands within the Boundary of a Proposed Bureau of Reclamation Reservoir near the City of Lompoc, Santa Barbara County	No resources within 0.25 mile
E-2224	1998	Singer, Clay	Cultural Resources Survey and Impact Assessment for a 20 Acre Property at 1285 Cougar Ridge Road near Buellton, Santa Barbara, California	Negative
E-2247	1998	Levulett, V.; Pavlik, R.	Department of Transportation Negative Archaeological Survey Report in Santa Barbara County, Route 1, Post Mile R19.2/R21.5	Negative
E-2360	1993	Levulett, V.; Mikkelsen, P.	Historic Property Survey Report for Proposed Highway Construction Project near Lompoc, California	No resources within 0.25 mile
E-2438	1995	Gibson, R.	Results of Phase One Archaeological Surface Survey for the GTE Buried Cable Project Along Highway One, South of Highway 246, near Lompoc, Santa Barbara County, California	Negative
E-2538	2000	Palmer, K.	Historic American Engineering Record for Zaca Creek Bridge Number 1	P-42-040705

TABLE 4.5-1
Previous Cultural Resource Studies and Previously Identified Resources within 0.25 Mile of the Cabrillo–Santa Ynez Power Line
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Report No.[a]	Date	Author(s)	Title	Results
E-2630	1999	Chambers Group, Inc.	Cultural Resources Records Search and Survey Report for a Fiber-Optic Cable Connection Corridor, City of Lompoc, Santa Barbara County, California	Negative
E-3074	2003	Spanne, L.	Phase I Archaeological Survey Report for the Grefco Project, APN 099-14-21, City of Lompoc	Negative
—	2006	Price et al.	Final Report of Archaeological Investigations, Mission Hills/ Santa Ynez Extension, Coastal Branch Aqueduct, Phase II	CA-SBA-2687

[a] Numbered reports on file at Central Coast Information Center.

Two important studies are omitted from the list provided by the Information Center. The Mission Hills-Santa Ynez Extension of the Coastal Branch Aqueduct, a part of the State Water Project, traversed the same general region as the current Project and passes beneath the power line near the point where it crosses SR 246, near Pole 69. Archaeological studies for the Mission Hills-Santa Ynez extension are reported by Price et al. (2006). Additionally, the Information Center records search did not identify the report evaluating the National Register significance evaluation of CA-SBA-3387, a prehistoric archaeological site along Zaca Creek immediately north of Santa Ynez Switching Station (McKim et al. 1996), although it did retrieve information on the Phase 1 survey for the same Project (McKim and Price 1996). It is unclear why these two reports are not included in the Information Center files.

Æ identified five previously documented cultural resources within 0.25 mile of the Project area. Four of these were noted by the Information Center; the fifth (CA-SBA-2687) was discovered during investigations for the Coastal Branch Aqueduct and documented by Price et al. (2006).

CA-SBA-1751 (P-42-001751) is a sparse to moderate-density lithic scatter located approximately 230 meters south of the power line on the outskirts of Lompoc (Spanne 1982). This site has not been evaluated for significance.

CA-SBA-2687 (P-42-002687) is a complex scatter of flaked and ground stone tools and debris with some faunal remains and other materials. It is located approximately 260 feet (80 meters) south of the power line and just south of SR 246, near the middle of the Project area. The site was discovered during construction of the Coastal Branch Aqueduct and was evaluated for significance and National Register eligibility at that time. The site was judged ineligible for the National Register due to prior disturbance which had severely compromised its integrity (Price et al. 2006).

CA-SBA-2639 (P-42-002639) is a low-density lithic scatter on a terrace of Dry Creek near the east end of the Project area (Gibson and Parsons 1992). It is more than 1,250 feet (380 meters) south of the power line. The National Register status of the site is unknown.

In addition, one historical resource, Zaca Creek Bridge No. 1 (P-42-040705) is near the east end of the Project area, 260 feet (80 meters) south of the power line. This bridge was eligible for the National Register and was documented according to the standards of the Historic American Engineering Record prior to its demolition by the County during the Jonata Park Road Bridges Replacement Project (Palmer 2000). As noted above, archaeological site CA-SBA-3387 was discovered during the same project and was judged ineligible for the National Register (McKim and Price 1996).

4.5.3.4 Results of Native American Consultation

On September 23, 2008, the NAHC responded to Æ's data request and indicated that it had no sites within the Project area listed on its Sacred Lands Inventory. The NAHC provided a list of local Native American tribal representatives who might have an interest in the proposed Project. On September 26, 2008, Æ sent informational letters to each of these tribal representatives advising them about the Project and soliciting their input. (See Appendix C for copies of correspondence.) Æ subsequently made follow-up telephone calls to each of these representatives.

Table 4.5-2 summarizes Æ's efforts at consultation with these local Native American representatives. None of the Native American representatives consulted for the Project expressed concern over potential impacts to significant cultural resources.

TABLE 4.5-2
Details of Native American Consultation
Cabrillo-Santa Ynez 115 kV Reconductoring Project

Name	Affiliation	Letter Mailed	Follow-up Contact	Results
Vincent Armenta	Chumash	9/26/08	10/14/08	Freddie Romero, on behalf of the Santa Ynez Band of Mission Indians, called to ask for more details on construction; Æ provided him with that additional information.
Sam Cohen	Chumash	9/26/08	10/14/08	See above.
Adelina Alva-Padilla	Chumash	9/26/08	10/14/08	See above.
Mark Vigil	Chumash	9/26/08	10/15/08	Left message; no response to date.
Diane Napoleone	Chumash	9/26/08	10/15/08	Attempted phone and email contact; phone numbers and e-mail address are not current; no response to date.
Kote & Lin A-Lul'Koy Lotah	Chumash	9/26/08	10/15/08	Reached by phone; no comments or concerns about the Project.

4.5.3.5 Results of Field Inventory

Five cultural resources had been recorded previously within 0.25 mile of the Cabrillo–Santa Ynez 115 kV line. The survey revealed that none of these sites extend into the Project area and none will be impacted by the power line replacement.

One previously undocumented historical site was identified during the field inventory. AE-1857-3H consists of a wooden water tank and associated concrete cattle trough, most likely dating to the mid twentieth century. The site is on the lower western slope of a ridge within a private lot at 2225 Sweeney Road, just east of Lompoc near Pole 13. The site measures 75 feet by 30 feet, as defined by the visible extent of features. No surface artifacts were observed in the vicinity. Dense mustard, fennel, and other exotic vegetation obscure much of the ground surface; visibility was approximately 5 percent.

In addition to the historical site, three isolated artifacts were recorded within a 1-kilometer area between poles 40-7 and 41-4. AE-1857-iso1 is a chert flake tool found within an access road approximately 740 feet (226 meters) north of the power line and 1,020 feet (310 meters) east of ranch buildings at the south end of Hapgood Road. AE-1857-iso2 is a rhyolite flake fragment exposed in an access road 360 feet (110 meters) northeast of Pole 56. AE-1857-iso4 is a lead bullet (projectile) possibly dating to the mid-1800s, found approximately 50 feet (15 meters) north of Pole 61.

4.5.3.6 Consistency with Plans and Policies

By implementation of the Applicant Proposed Measures to avoid impacting cultural resources, the Project will be consistent with all state and local plans, policies, codes, and standards governing the treatment of archaeological and historical resources.

4.5.4 Potential Impacts and Mitigation

The following section describes significance criteria for cultural resource impacts derived from the CEQA Guidelines, potential Project-related construction and operational impacts, and applicant proposed measures for eliminating, reducing, or mitigating anticipated impacts.

4.5.4.1 Significance Criteria

If a project may cause a substantial adverse change in the characteristics of a resource that convey its significance or justify its eligibility for inclusion in the CRHR or a local register, either through demolition, destruction, relocation, alteration, or other means, then the project is judged to have a significant effect on the environment (CEQA Guidelines, §15064.5(b)). Direct impacts may occur by:

1. Physically damaging, destroying, or altering all or part of the resource;
2. Altering characteristics of the surrounding environment that contribute to the resource's significance;
3. Neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily result from the effects of project-induced population growth. Such growth can result in increased construction as well as increased recreational activities that can disturb or destroy cultural resources; or
4. The incidental discovery of cultural resources without proper notification.

Direct impacts can be assessed by identifying the types and locations of proposed development, determining the exact locations of cultural resources within the project area, assessing the significance of the resources that may be affected, and determining the appropriate mitigation.

Indirect impacts primarily result from the effects of project-induced population growth. Removal, demolition, or alteration of historical resources can destroy the historic fabric of an archaeological site, structure, or historic district. Due to their nature, indirect impacts are much harder to assess and quantify.

CEQA provides guidelines for mitigating impacts to historical resources in Section 15126.4. For architectural resources, maintenance, repair, stabilization, restoration, preservation, conservation, or reconstruction in a manner consistent with the Secretary of the Interior's Standards and Guidelines (Weeks and Grimmer 1995) generally will constitute mitigation of impacts to a less-than-significant level.

Avoidance is the preferred manner of mitigating impacts to significant archaeological resources. If avoidance cannot be achieved and data recovery excavation is the only feasible mitigation, a data recovery plan must be prepared and adopted prior to any excavation.

Would the Project:

II.e) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? With implementation of APMs CR-1 through CR-3, a less than significant temporary impact will occur.

One archaeological site and three isolated artifacts were identified during the field inventory of the Project area. These resources have not been evaluated to determine whether they qualify as historical resources. APMs CR-1 through CR-3 will ensure that these cultural resources are not impacted during implementation of the Project.

II.f) Cause a substantial adverse change in the significance of a unique archaeological resource as defined in §15064.5? No impact will occur; mitigation is not needed.

The Project will not affect unique archaeological resources; therefore, no impact will occur.

II.g) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? No impact will occur; mitigation is not needed.

The Project will not destroy a unique paleontological resource or site or unique geologic feature; therefore, no impact will occur.

II.h) Disturb any human remains, including those interred outside of formal cemeteries? No impact will occur; mitigation is not needed.

The existing power line does not impact any formal cemeteries and it is not anticipated that human remains will be affected; therefore, no impacts are expected.

4.5.4.2 Potential Impacts and Applicant Proposed Measures

PG&E will implement the following APMs to avoid construction-related impacts to cultural resources. Proposed measures apply to construction-related impacts as well as reasonably foreseeable effects of future Project operation. Proposed APMs are consistent with all applicable laws, regulations, and standards.

Potential Impact CR-1: One potentially significant historical resource may be impacted during construction. This impact will be avoided completely with implementation of APM CR-1. Archaeological site Æ-1857-3H is located approximately 10-15 feet north of the power line, 50 feet east of an existing access road, and 90 feet northeast of Pole 13. The site has not been evaluated for significance or eligibility to the CRHR. APM CR-1 and CR-2 are proposed to ensure that this cultural resource is avoided during implementation of the Project.

APM CR-1: Archaeological site avoidance. To ensure that Æ-1857-3H is not inadvertently damaged during implementation of the Project, the limits of the work areas listed in Potential Impact CR-1 will be marked with readily visible flagging tape and the construction crews will be instructed that there will be no vehicle access, travel, equipment staging and storage, or other construction-related work outside of the flagged work areas when working at Pole 13.

APM CR-2: Pre-construction Worker Education Program. PG&E will design and implement a Worker Education Program that will be provided to all Project personnel who may encounter and/or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program.

The Worker Education Program shall include, at a minimum:

- A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the Project vicinity
- A review of applicable local, state and federal ordinances, laws and regulations pertaining to historic preservation
- A discussion of site avoidance requirements and procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the Project
- A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies
- A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and other applicable laws and regulations

The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the Project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.

APM CR-3: Unanticipated discoveries management. In the unlikely event that previously unidentified cultural resources are uncovered during implementation of the Project, all work within 165 feet (50 meters) of the discovery will be halted and redirected to another location. PG&E's cultural resources specialist or his/her designated representative will inspect the discovery and determine whether further investigation is required. If the discovery can be avoided and no further impacts will occur, the resource will be documented on State of California Department of Parks and Recreation cultural resource records and no further effort will be required. If the resource cannot be avoided and may be subject to further impact, PG&E will evaluate the significance and CRHR eligibility of the resources, and implement data recovery excavation or other appropriate treatment measures if warranted.

4.5.4.3 Operation and Maintenance

Operation and maintenance activities are not expected to change with implementation of the Project; therefore, no temporary or permanent operation and maintenance impacts are anticipated.

4.5.5 Works Cited

Applegate, Richard. 1975. An Index of Chumash Placenames. In *Papers on the Chumash*, pp. 19–46. San Luis Obispo County Archaeological Society Occasional Paper 9.

Arnold, Jeanne. 1992. Complex Hunter-Gatherer-Fishers of Prehistoric California: Chiefs, Specialists, and Maritime Adaptations of the Channel Islands. *American Antiquity* 57:60–84.

Becker, Robert H. 1964. Diseños of California Ranchos: Maps of Thirty-Seven Land Grants [1822–1846] from the Records of the U.S. District Court, San Francisco. Book Club of California, San Francisco.

Buellton Chamber of Commerce. 2008. A Brief History of Buellton. http://www.buellton.citymax.com/History.html, accessed November 2008.

City of Lompoc. 2008. History of Lompoc, http://www.cityoflompoc.com/government/history.htm. City of Lompoc Web site, accessed November 2008.

Colten, Roger H. 1994. Prehistoric Animal Exploitation, Environmental Change, and Emergent Complexity on Santa Cruz Island, California. In *Proceedings of the Fourth California Islands Symposium: Update on the Status of Resources*, edited by William A. Halvorson and Gloria J. Maender, pp. 201–214. Santa Barbara Museum of Natural History, Santa Barbara, California.

Cragg, Curt . 2006. *Buellton.* Arcadia, Charleston, South Carolina.

Erlandson, Jon M. 1994. *Early Hunter-Gatherers of the California Coast.* Plenum, New York.

Gibson, Robert, and Jeffrey Parsons. 1992. *Results of Phase One Archaeological Surface Survey for the Mission Oaks Ranch Project near Buellton, Santa Barbara County.* Gibson's Archaeological Consulting, Paso Robles, California. Prepared for Mission Oaks Ltd., Solvang, California.

Glassow, Michael A. 1979. An Evaluation of Models of Inezeño Chumash Subsistence and Economics. *Journal of California and Great Basin Anthropology* 1:155–161.

Glassow, Michael A. (editor). 1990. *Archaeological Investigations on Vandenberg Air Force Base in Connection with the Development of Space Transportation System Facilities,* with contributions by Jeanne E. Arnold, G. A. Batchelder, Richard T. Fitzgerald, Brian

K. Glenn, D. A. Guthrie, Donald L. Johnson, and Phillip L. Walker. Department of Anthropology, University of California, Santa Barbara. Submitted to U.S. Department of the Interior, National Park Service, Western Region Interagency Archeological Services Branch, San Francisco, Contract No. CX-8099-2-0004.

Glassow, Michael A., and Larry R. Wilcoxon. 1988. Coastal Adaptations near Point Conception, California, with Particular Regard to Shellfish Exploitation. *American Antiquity* 53:36–51.

Hildebrandt, William R. 1999. *Archaeological Investigations at Jonjonatá (CA-SBA-3404): A Late Prehistoric and Early Historic Chumash Village in the Interior of Santa Barbara County, California.* Far Western Anthropological Research Group, Inc., Davis, California.

Horne, Stephen P. 1981. *The Inland Chumash: Ethnography, Ethnohistory, and Archaeology.* Ph.D. dissertation, University of California, Santa Barbara.

Johnson, John. 1988. *Chumash Social Organization: An Ethnohistoric Perspective.* Ph.D. dissertation, Department of Anthropology, University of California, Santa Barbara.

Keeley, Lawrence. 1988. Hunter-Gatherer Economic Complexity and "Population Pressure": A Cross-Cultural Analysis. *Journal of Anthropological Archaeology* 7:373–411.

King, Chester D. 1975. The Names and Locations of Historic Chumash Villages. *Journal of California Anthropology* 2:171–179.

________. 1984. Ethnohistoric Background. In Archaeological Investigations on the San Antonio Terrace, Vandenberg Air Force Base, California, in Connection with MX Facilities Construction, pp. I-1–I-54. Chambers Consultants and Planners, Stanton, California. Submitted to U.S. Army Corps of Engineers, Los Angeles District, Contract No. DAC09-81-C-0048.

________. 1990. *Evolution of Chumash Society: A Comparative Study of Artifacts Used for Social System Maintenance in the Santa Barbara Channel Region before A.D. 1804.* The Evolution of North American Indians, edited by David Hurst Thomas. Garland, New York.

Kroeber, Alfred L. 1925. *Handbook of the Indians of California.* Bureau of American Ethnology Bulletin No. 78, Smithsonian Institution, Washington, D.C.

Landberg, Leif. 1965. *The Chumash Indians of Southern California*. Southwest Museum Papers No. 19. Los Angeles.

Lebow, Clayton G., Douglas R. Harro, Rebecca L. McKim, and Carole Denardo. 2001. *Archaeological Excavations at CA-SBA-246, An Early Holocene Site on Vandenberg Air Force Base, Santa Barbara County, California.* Applied EarthWorks, Inc., Fresno, California, for Tetra Tech, Inc., Santa Barbara, California. Submitted to 30 CES/CEV, Vandenberg Air Force Base, California, USAF Contract No. F04684-95-C-0045.

________. 2002. *Archaeological Excavations at the Honda Beach Site (CA-SBA-530), Vandenberg Air Force Base, Santa Barbara County, California.* Applied EarthWorks, Inc., Fresno, California, for Tetra Tech, Inc., Santa Barbara, California. Submitted to

30 CES/CEVPC, Vandenberg Air Force Base, California, AFCEE Contract No. F41684-00-D-8029.

Lompoc Valley Historical Society. 2008. Lompoc History, http://www.lompochistory.org/LompocHistory.html. Lompoc Valley Historical Society Web site, accessed November 2008.

Macko, Michael E. 1983. *Beads, Bones, Baptisms, and Sweatlodges: Analysis of Collections from Elijman (CA-SBa-485), a Late Period Ynezeño Chumash Village in the Central Santa Ynez Valley, California.* Master's thesis, Department of Anthropology, University of California, Santa Barbara.

McKim, Rebecca, and Barry A. Price. 1996. *Archaeological Survey Report for the Jonata Park Road Bridges Replacement Project, Santa Barbara County, California.* Applied EarthWorks, Inc., Fresno, California. Submitted to the County of Santa Barbara Department of Public Works, Santa Barbara, California.

McKim, Rebecca, Douglas Harro, and Barry A. Price. 1996. *Testing and Evaluation Report: CA-SBA-3387, Jonata Park Road Bridges Replacement Project, Santa Barbara County, California.* Applied EarthWorks, Inc., Fresno, California. Submitted to the County of Santa Barbara Department of Public Works, Santa Barbara, California.

Mikkelsen, Patricia, and Deborah Jones. 1998. *Report of Excavations at Site CA-SBA-2203/H, along State Route 154, Santa Barbara County, California.* Far Western Anthropological Research Group, Inc., Davis, California. Prepared for the California Department of Transportation, District 5, San Luis Obispo.

Palmer, Kevin. 2000. *Historic American Engineering Report for Zaca Creek Bridges*. On file, California Historical Resources Information System, Central Coast Information Center, University of California, Santa Barbara.

Price, Barry A., Roger H. Colten, Timothy W. Canaday, Mary E. Clark, Christopher Ryan, Terri P. Fulton, Michael H. Imwalle, and C. Kristina Roper. 2006. *Final Report of Archaeological Investigations, Mission Hills/Santa Ynez Extension, Coastal Branch Aqueduct, Phase II*, with contributions by Douglas R. Harro, Kurt T. Katsura, and Rebecca L. McKim. Applied EarthWorks, Inc., Fresno, California. Submitted to Central Coast Water Authority, Buellton, California.

Ruth, Clarence. 1936. Research Among the Ancient Chumash Village Sites of Northwestern Santa Barbara County. M.A. thesis, University of Southern California, Los Angeles.

Spanne, Laurence W. 1975. Seasonal Variability in the Population of Barbareño Chumash Villages: An Explanatory Model. In *Papers on the Chumash*, pp. 61–87. San Luis Obispo County Archaeological Society Occasional Paper No. 9.

________. 1982. Archaeological Site Survey Record: Hauenstein No. 1 (CA-SBA-1751). On file, California Historical Resources Information System, Central Coast Information Center, University of California, Santa Barbara.

________. 1988. *City of Lompoc Cultural Resources Study*. Prepared for the City of Lompoc General Plan Update Program.

Storke, Yda Addis. 1891. Land Grants. In *A Memorial and Biographical History of the Counties of Santa Barbara, San Luis Obispo, and Ventura, California.* Lewis Publishing. Abstracted by Joy Fisher, http://files.usgwarchives.net/ca/santabarbara/history/1891/amemoria/landgran229gms.txt, 2007. USGenWeb Archives, accessed November 2008.

Tainter, Joseph A. 1971. Climatic Fluctuations and Resource Procurement in the Santa Ynez Valley. *Pacific Coast Archaeological Society Quarterly* 7(3):25–63. Costa Mesa, California.

________. 1972. Simulation Modeling of Inland Chumash Interaction. *University of California Archaeological Survey Annual Report* 14:79–106. Los Angeles.

________. 1975. Hunter-Gatherer Territorial Organization in the Santa Ynez Valley. *Pacific Coast Archaeological Society Quarterly* 11(2):27–40. Costa Mesa, California.

Van Horn, D. 1979. *An Overview of Potential Impacts to Cultural Resources Resulting from Proposed Alternative Transmission Lines Serving the LNG Facility at Point Conception, California.* On file, California Historical Resources Information System, Central Coast Information Center, University of California, Santa Barbara.

Waechter, Sharon. 1999. Ethnohistoric Context. In *Archaeological Investigations at Jonjonatá (CA-SBA-3404): A Late Prehistoric and Early Historic Chumash Village in the Interior of Santa Barbara County, California*, by William R. Hildebrandt. Far Western Anthropological Research Group, Inc., Davis, California.

Ward, Cynthia Carbone. 2007. A Little City Finds Its Voice: Buellton's Brush with Expansion. *Santa Barbara Independent,* 16 August, accessed at http://www.independent.com/news/2007/aug/16/little-city-finds-voice/, November 2008.

Woodman, Craig F., James L. Rudolph, and Teresa P. Rudolph (editors). 1991. *Western Chumash Prehistory: Resource Use and Settlement in the Santa Ynez River Valley*. Science Applications International Corporation, Santa Barbara, California. Prepared for Unocal Corporation. Submitted to U.S. Army Corps of Engineers, Los Angeles District.

4.6 Geology, Soils, and Mineral Resources

4.6.1 Introduction

This section describes the existing geological and soil conditions, potential geologic and geotechnical hazards, and mineral resources along the Cabrillo – Santa Ynez Power Line corridor and concludes that any impacts will be less than significant. Potential geologic hazards, including fault-surface rupture, ground shaking, landsliding, liquefaction, and other ground-failure mechanisms, are addressed. The following CEQA Checklist summarizes the significance of the potential geologic and mineral resource impacts.

VI. GEOLOGY AND SOILS -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	❒	❒	❒	☒
ii) Strong seismic ground shaking?	❒	❒	❒	☒
iii) Seismic-related ground failure, including liquefaction?	❒	❒	❒	☒
iv) Landslides?	❒	❒	☒	❒
b) Result in substantial soil erosion or the loss of topsoil?	❒	❒	☒	❒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	❒	❒	☒	❒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	❒	❒	❒	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	❒	❒	❒	☒
X. MINERAL RESOURCES -- Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❒	❒	❒	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❒	❒	❒	☒

The Project is located within a geologically complex, seismically active region underlain by various types of deposits, including unconsolidated alluvium and consolidated bedrock formations. Implementation of the APMs described in Section 4.6.4, which includes location of Project components, design-level geotechnical investigations, and appropriate engineering and construction measures, will ensure that impacts will be less than significant.

4.6.2 Methodology

Information on the geology, soils, and mineral resources was compiled from published literature, maps, and examination of aerial photographs. The area has been well-studied and documented by various researchers and government entities. Geologic units and structural features were obtained from maps published by the Dibblee Foundation (Dibblee, 1988, 1993a-b) in cooperation with the United States Geological Survey (USGS) and California Geological Survey (CGS).

Soil descriptions were obtained from mapping by the United States Department of Agriculture (USDA). Evaluation of landslide hazards was made by review of aerial photographs, geologic maps, and County of Santa Barbara hazard maps. Information on mineral resources was obtained from the USGS and CGS. Seismic information was developed from several data sources, including the USGS, CGS, California Department of Transportation (Caltrans), and the *Seismic Safety and Safety Element of the Santa Barbara County Comprehensive Plan* (Comprehensive Plan) (Santa Barbara County, 1979).

4.6.3 Existing Conditions

4.6.3.1 Regulatory Background

California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which requires the establishment of "earthquake fault zones" (formerly known as "special studies zones") along known active faults in California (Bryant and Hart, 2007). Information on earthquake fault zones is provided for public information purposes, although the CPUC's design standards for power line poles adequately address impacts or power lines. Please see the Seismicity subsection for further discussion.

4.6.3.2 Environmental Setting

Geology and Physiography

The Project extends 14.6 miles eastward from the east end of the Lompoc Valley (Cabrillo Substation), across the Santa Rita Hills and southern margin of the Santa Rita Valley, and through the southern part of the Purisima Hills, where it terminates at Santa Ynez Switching Station at US 101 about one mile north of Buellton. The topography is characterized by agricultural flatlands, gently rolling hills, and intervening valleys with some moderately steep terrain in the eastern half of the Project. The power line crosses the Santa Ynez River just east of Cabrillo Station in Lompoc as well as a number of other southward flowing drainages that feed the Santa Ynez River. Ground surface elevations range from approximately 100 feet in Lompoc to almost 1,000 feet between Crawford Canyon and Cañada de los Platos Blancos (USGS, 1959a-b, 1982).

The Project area lies within a transitional region between the Transverse Ranges Province and Coast Ranges Province (Dibblee, 1982). The Transverse Ranges Province is a long, narrow, east-west-trending strip of mountain ranges and valleys that transect the prevailing northwest trending Coast Ranges Province to the northwest and the Peninsular Ranges Province to the southeast. The Santa Ynez Mountains, located to the south of the Project area, are the westernmost mountain range of the Transverse Ranges Province. The power line corridor is located within a group of valleys and hills to the north of the Santa Ynez Mountains that have a general west-to-northwest trend, intermediate to the east-west Transverse Ranges and the northwest-trending Coast Ranges (Dibblee, 1982).

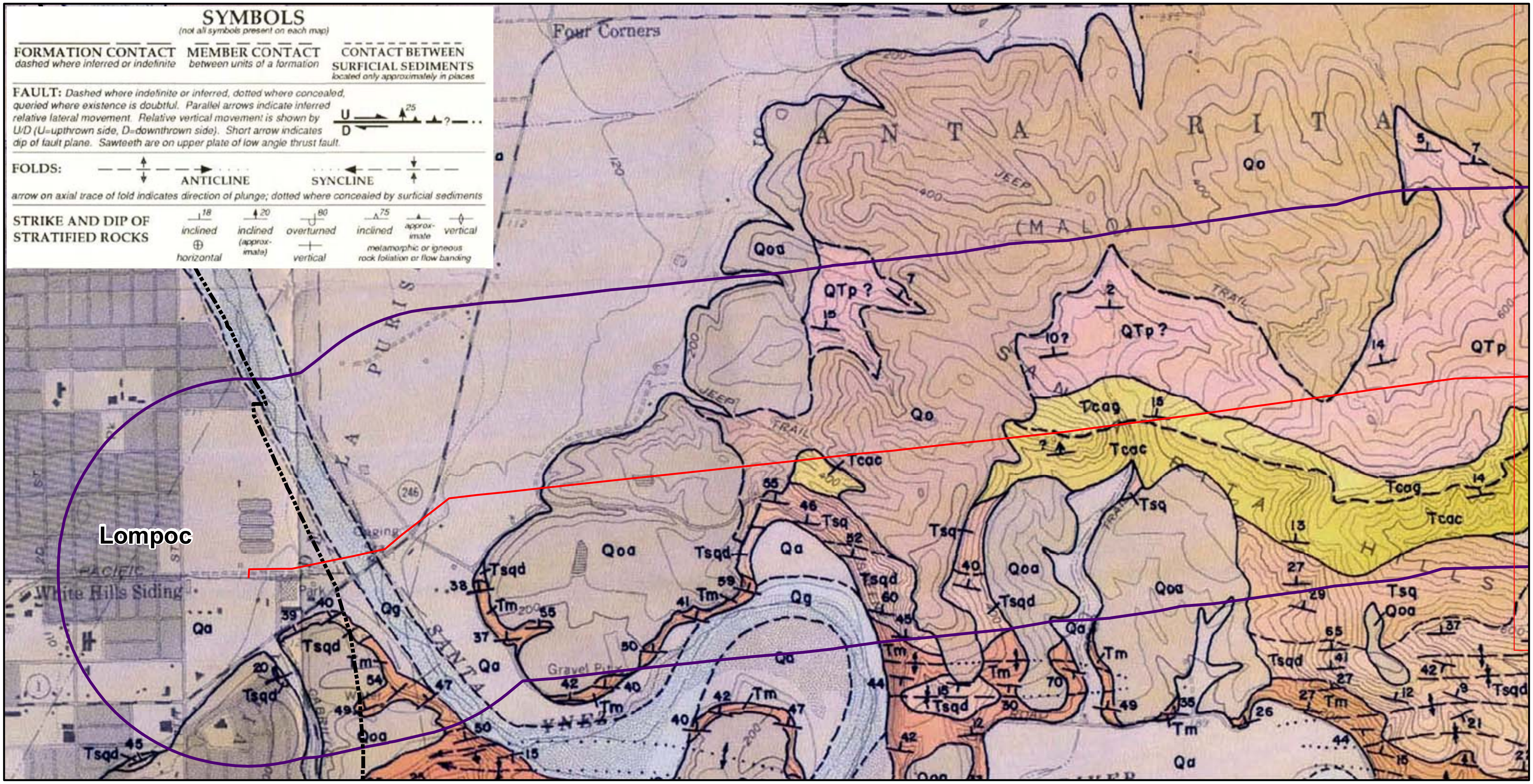
In terms of structural geology, the Project is situated in the southern part of the Santa Maria Basin, a structural wedge bounded by the Santa Lucia and San Rafael Mountains on the northeast, and the Santa Ynez Mountains to the south. The basin continues westward and northward offshore. According to Namson and Davis (1990), the Santa Maria Basin has been subjected to compression and uplift during Pliocene and Quaternary times, as evidenced by extensive folds, thrust faults, angular unconformities, and mountain building. Seismic activity unrelated to surface faults, compressive earthquakes in the region, folded Quaternary deposits, and recent geodetic measurements are evidence that convergence is active (Namson and Davis, 1990). Previously unrecognized active blind thrusts are believed responsible for the compressive deformational structural fabric of the Santa Maria Basin. The most important structural element associated with the crustal shortening described by Namson and Davis (1990) is the Purisima-Solomon thrust, which is on the order of 4 to 5 miles deep in the vicinity of the Project area.

Other important structural features within the Project area include the Santa Ynez River fault, Santa Rita syncline, and the Purisima anticline. The Santa Ynez River fault trends east-west, parallel to the power line corridor, for approximately 37 miles from the Santa Ynez Mountains, where it branches off of the Santa Ynez fault and terminates near the coast west of Lompoc. Other important faults in the region that are active or potentially active include the Santa Ynez fault, Pacifico fault, Honda fault, Lions Head fault, and the Los Alamos-Baseline fault system. These faults and associated seismic hazards are discussed further in the Seismicity section below.

Stratigraphic Units

Geologic units within the basin include a thick succession of Cretaceous- through Quaternary-age sedimentary and volcanic formations. The Cabrillo – Santa Ynez Power Line is underlain by a variety of Tertiary and Quaternary sedimentary units. A list of the units (from oldest to youngest) within the power line right-of-way and a brief description of each unit are presented below. A geologic map (from Dibblee, 1988, 1993a-b) of the region is shown in Figure 4.6-1, Geologic Features.

- **Monterey Shale (Tm, Tmd; late Miocene age):** The uppermost member (Tmd) consists of nearly white, laminated diatomite with localized thin layers of gray chert. The upper shale unit (Tm) constitutes a major part of the Monterey Shale in the Purisima Hills. It consists of dark gray-brown, bituminous, siliceous, thinly bedded shale that weathers white. The mostly brittle, cherty shale contains thin layers of soft fissile shale. The Monterey Shale is exposed on the hill above Santa Ynez Switching Station.



Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

City Boundary

FIGURE 4.6-1 Map 1
Geologic Features
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1,000 2,000 Feet

Scale: 1:24,000

Rev. 6: 06/29/2009

Qg

Qg *stream channel deposits of gravel, sand and silt*

Qa

SURFICIAL SEDIMENTS

Qa *valley, floodplain and stream channel alluvial deposits of gravel, sand, and clay; dissected only by active stream channels*

Qls

LANDSLIDE DEBRIS

Qoa / Qo

OLDER DISSECTED SURFICIAL SEDIMENTS

remnants of weakly indurated older alluvial sediments

Qoa *older alluvial gravel, sand, and clay*

Qo *Orcutt Sand: tan to rusty brown, wind-deposited sand; locally pebbly at base*

—UNCONFORMITY—

QTps / QTp

PASO ROBLES FORMATION

weakly consolidated valley alluvial sediments, deposited by streams that drained from rising San Rafael Mountains; Pleistocene and latest Pliocene(?) age

QTps *light gray to tan pebbly sand west of Canada Laguna; with 0–66 ft (0–2m) of fresh water gray-white marly limestone (Los Alamos Marl) at base; sand and limestone disappear eastward*

QTp *light gray conglomerate or gravel composed of white siliceous shale pebbles of Monterey Shale in sandy to clayey matrix; crudely to cross-bedded, includes pebbly sand and greenish gray claystone; mostly pebbly sand and clay in Santa Rita Valley area*

Tcag / Tcac

CAREAGA SANDSTONE

shallow marine clastic regressive, weakly indurated; late Pliocene age

(of Woodring and Bramlette 1950)

Tcag *Graciosa Member: massive gray-white to tan soft sandstone or sand, in part nonmarine and wind deposited, locally pebbly at base*

Tcac *Cebada Member: massive tan to yellow, soft, fine grained sandstone or sand; includes a thin fossiliferous calcareous layer at top locally*

—UNCONFORMITY—

Tf

FOXEN CLAYSTONE

(of Woodring and Bramlette 1950)

marine clastic; middle to late Pliocene age

Tf *gray, soft, massive claystone or siltstone, crumbly where weathered*

Tsq / Tsqb / Tsqd

SISQUOC FORMATION

marine biogenic to clastic; late Miocene age (Late Mohnian-Delmontian Stage)

Tsq *light gray, soft, slightly diatomaceous claystone*

Tsqd *mostly cream-white diatomaceous claystone or shale; semi-siliceous, massive to vaguely bedded, coherent, impervious, but closely fractured, crumbly where weathered; includes nearly white, somewhat punky bedded diatomite in upper part*

Tsqb *burned shale within basal* **Tsqd**: *once partly molten by underground combustion; occurs as brown, red and yellow, frothy, subglassy rock, below Careaga tar sand at Redrock Mountain; described by Eldridge (1901)*

Tmd / Tm / Tml

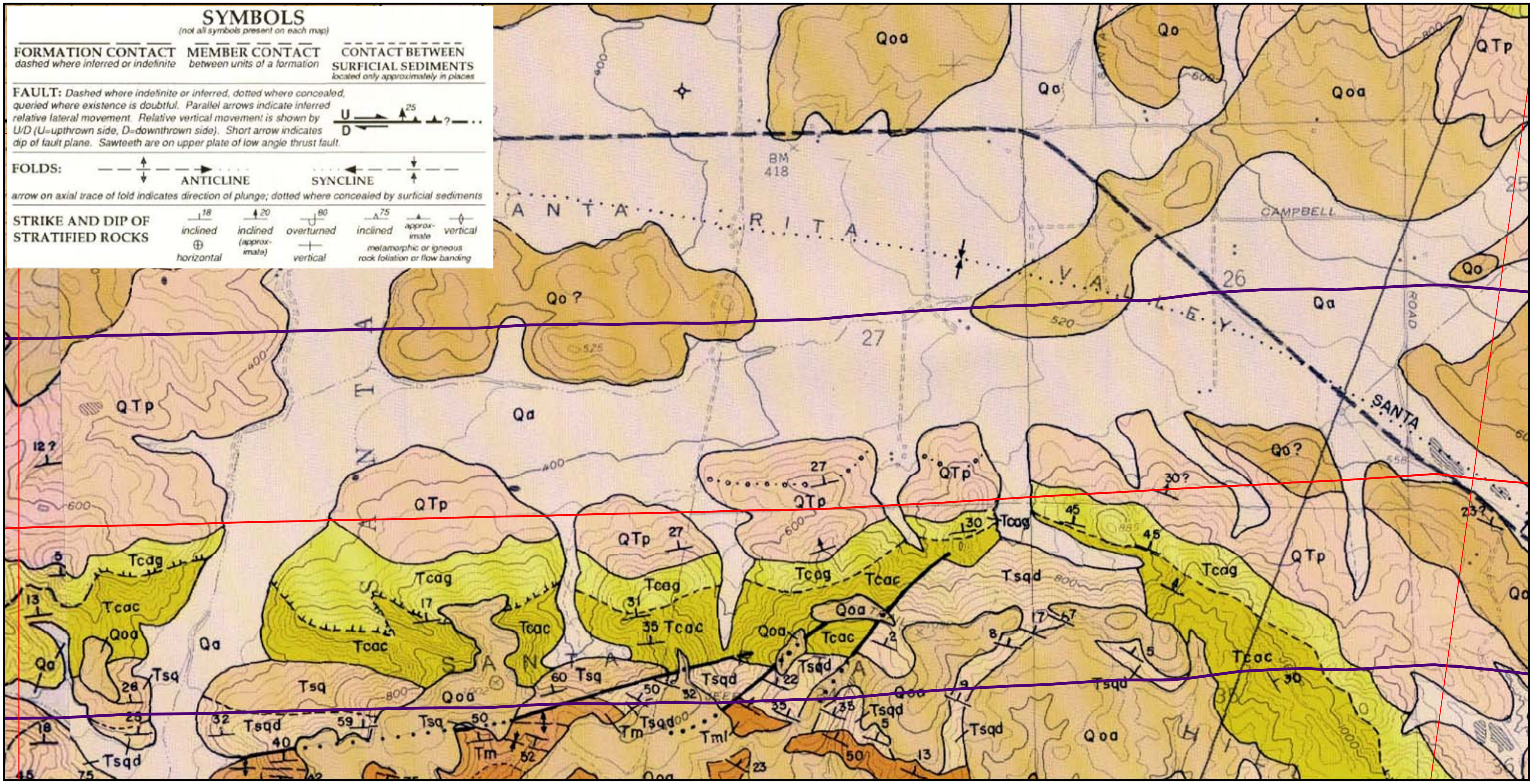
MONTEREY SHALE

marine biogenic; middle and late Miocene age

Tmd *uppermost local unit: nearly white, soft, punky, laminated diatomite; includes thin layers (few inches or centimeters thick) of gray chert locally; probably Mohnian Stage*

Tm *upper shale unit: constitutes major part of Monterey Shale in Purisima Hills; siliceous shale; dark gray-brown; bituminous, weathers white, laminated, hard, thin bedded platy shale to closely fractured brittle, gray, cherty shale; includes thin layers of soft fissile shale; Mohnian Stage*

Tml *lower shale unit in Santa Rita Hills: semi-siliceous shale, soft, fissile to punky, thin bedded, gray-brown shale that weathers cream-white; contains abundant diatom debris, foraminifera, and fish scales; includes some hard, platy siliceous shale and occasional thin, hard, light gray to yellow-tan dolomite-limestone layers; lower Mohnian-Luisian-Relizian Stages (Woodring and Bramlette 1950)*



Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

City Boundary

FIGURE 4.6-1 Map 2
Geologic Features
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1,000 2,000 Feet

N

Scale: 1:24,000

Rev. 6: 06/29/2009

Qg

Qg *stream channel deposits of gravel, sand and silt*

Qa

SURFICIAL SEDIMENTS

Qa valley, floodplain and stream channel alluvial deposits of gravel, sand, and clay; dissected only by active stream channels

Qls

LANDSLIDE DEBRIS

Qoa
Qo

OLDER DISSECTED SURFICIAL SEDIMENTS

remnants of weakly indurated older alluvial sediments

Qoa older alluvial gravel, sand, and clay

Qo Orcutt Sand: tan to rusty brown, wind-deposited sand; locally pebbly at base

—UNCONFORMITY—

QTps
QTp

PASO ROBLES FORMATION

weakly consolidated valley alluvial sediments, deposited by streams that drained from rising San Rafael Mountains; Pleistocene and latest Pliocene(?) age

QTps light gray to tan pebbly sand west of Canada Laguna; with 0-66 ft (0-2m) of fresh water gray-white marly limestone (Los Alamos Marl) at base; sand and limestone disappear eastward

QTp light gray conglomerate or gravel composed of white siliceous shale pebbles of Monterey Shale in sandy to clayey matrix; crudely to cross-bedded, includes pebbly sand and greenish gray claystone; mostly pebbly sand and clay in Santa Rita Valley area

Tcag
Tcac

CAREAGA SANDSTONE

shallow marine clastic regressive, weakly indurated; late Pliocene age
(of Woodring and Bramlette 1950)

Tcag Graciosa Member: massive gray-white to tan soft sandstone or sand, in part nonmarine and wind deposited, locally pebbly at base

Tcac Cebada Member: massive tan to yellow, soft, fine grained sandstone or sand; includes a thin fossiliferous calcareous layer at top locally

—UNCONFORMITY—

Tf

FOXEN CLAYSTONE
(of Woodring and Bramlette 1950)
marine clastic; middle to late Pliocene age

Tf gray, soft, massive claystone or siltstone, crumbly where weathered

Tsq
Tsqb
Tsqd

SISQUOC FORMATION

marine biogenic to clastic; late Miocene age (Late Mohnian-Delmontian Stage)

Tsq light gray, soft, slightly diatomaceous claystone

Tsqd mostly cream-white diatomaceous claystone or shale; semi-siliceous, massive to vaguely bedded, coherent, impervious, but closely fractured, crumbly where weathered; includes nearly white, somewhat punky bedded diatomite in upper part

Tsqb burned shale within basal **Tsqd**: once partly molten by underground combustion; occurs as brown, red and yellow, frothy, subglassy rock, below Careaga tar sand at Redrock Mountain; described by Eldridge (1901)

Tmd
Tm
Tml

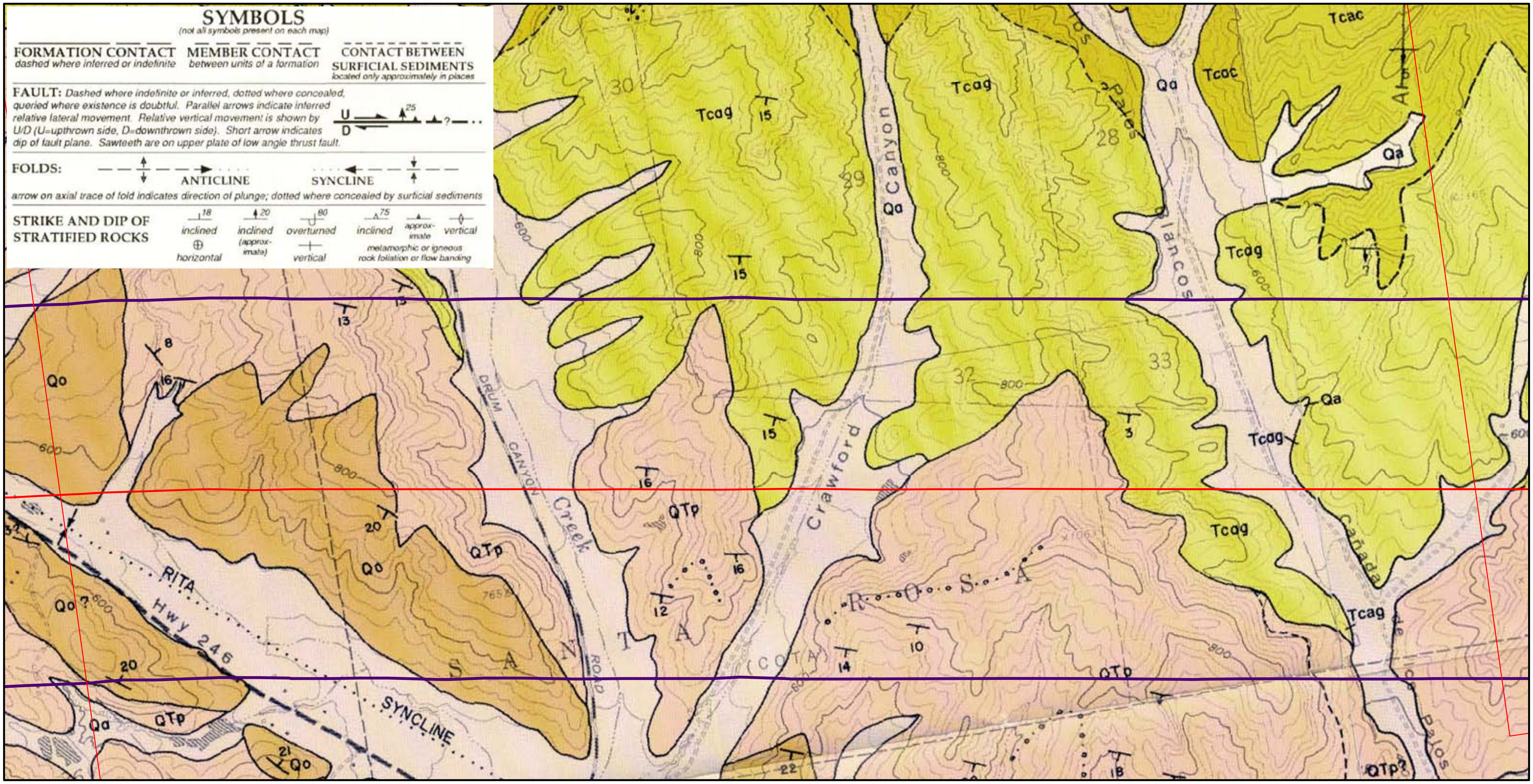
MONTEREY SHALE

marine biogenic; middle and late Miocene age

Tmd uppermost local unit: nearly white, soft, punky, laminated diatomite; includes thin layers (few inches or centimeters thick) of gray chert locally; probably Mohnian Stage

Tm upper shale unit: constitutes major part of Monterey Shale in Purisima Hills; siliceous shale; dark gray-brown; bituminous, weathers white, laminated, hard, thin bedded platy shale to closely fractured brittle, gray, cherty shale; includes thin layers of soft fissile shale; Mohnian Stage

Tml lower shale unit in Santa Rita Hills: semi-siliceous shale, soft, fissile to punky, thin bedded, gray-brown shale that weathers cream-white; contains abundant diatom debris, foraminifera, and fish scales; includes some hard, platy siliceous shale and occasional thin, hard, light gray to yellow-tan dolomite-limestone layers; lower Mohnian-Luisian-Relizian Stages (Woodring and Bramlette 1950)



Qg *stream channel deposits of gravel, sand and silt*

Qa

SURFICIAL SEDIMENTS

Qa *valley, floodplain and stream channel alluvial deposits of gravel, sand, and clay; dissected only by active stream channels*

Qls

LANDSLIDE DEBRIS

Qoa
Qo

OLDER DISSECTED SURFICIAL SEDIMENTS

remnants of weakly indurated older alluvial sediments

Qoa *older alluvial gravel, sand, and clay*

Qo *Orcutt Sand: tan to rusty brown, wind-deposited sand; locally pebbly at base*

—UNCONFORMITY—

QTps
QTp

PASO ROBLES FORMATION

weakly consolidated valley alluvial sediments, deposited by streams that drained from rising San Rafael Mountains; Pleistocene and latest Pliocene(?) age

QTps *light gray to tan pebbly sand west of Canada Laguna; with 0–66 ft (0–2m) of fresh water gray-white marly limestone (Los Alamos Marl) at base; sand and limestone disappear eastward*

QTp *light gray conglomerate or gravel composed of white siliceous shale pebbles of Monterey Shale in sandy to clayey matrix; crudely to cross-bedded, includes pebbly sand and greenish gray claystone; mostly pebbly sand and clay in Santa Rita Valley area*

Tcag
Tcac

CAREAGA SANDSTONE

shallow marine clastic regressive, weakly indurated; late Pliocene age

(of Woodring and Bramlette 1950)

Tcag *Graciosa Member: massive gray-white to tan soft sandstone or sand, in part nonmarine and wind deposited, locally pebbly at base*

Tcac *Cebada Member: massive tan to yellow, soft, fine grained sandstone or sand; includes a thin fossiliferous calcareous layer at top locally*

Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

City Boundary

—UNCONFORMITY—

Tf

FOXEN CLAYSTONE

(of Woodring and Bramlette 1950)

marine clastic; middle to late Pliocene age

Tf *gray, soft, massive claystone or siltstone, crumbly where weathered*

Tsq
Tsqb
Tsqd

SISQUOC FORMATION

marine biogenic to clastic; late Miocene age (Late Mohnian-Delmontian Stage)

Tsq *light gray, soft, slightly diatomaceous claystone*

Tsqd *mostly cream-white diatomaceous claystone or shale; semi-siliceous, massive to vaguely bedded, coherent, impervious, but closely fractured, crumbly where weathered; includes nearly white, somewhat punky bedded diatomite in upper part*

Tsqb *burned shale within basal* **Tsqd**: *once partly molten by underground combustion; occurs as brown, red and yellow, frothy, subglassy rock, below Careaga tar sand at Redrock Mountain; described by Eldridge (1901)*

Tmd
Tm
Tml

MONTEREY SHALE

marine biogenic; middle and late Miocene age

Tmd *uppermost local unit: nearly white, soft, punky, laminated diatomite; includes thin layers (few inches or centimeters thick) of gray chert locally; probably Mohnian Stage*

Tm *upper shale unit: constitutes major part of Monterey Shale in Purisima Hills; siliceous shale; dark gray-brown; bituminous, weathers white, laminated, hard, thin bedded platy shale to closely fractured brittle, gray, cherty shale; includes thin layers of soft fissile shale; Mohnian Stage*

Tml *lower shale unit in Santa Rita Hills: semi-siliceous shale, soft, fissile to punky, thin bedded, gray-brown shale that weathers cream-white; contains abundant diatom debris, foraminifera, and fish scales; includes some hard, platy siliceous shale and occasional thin, hard, light gray to yellow-tan dolomite-limestone layers; lower Mohnian-Luisian-Relizian Stages (Woodring and Bramlette 1950)*

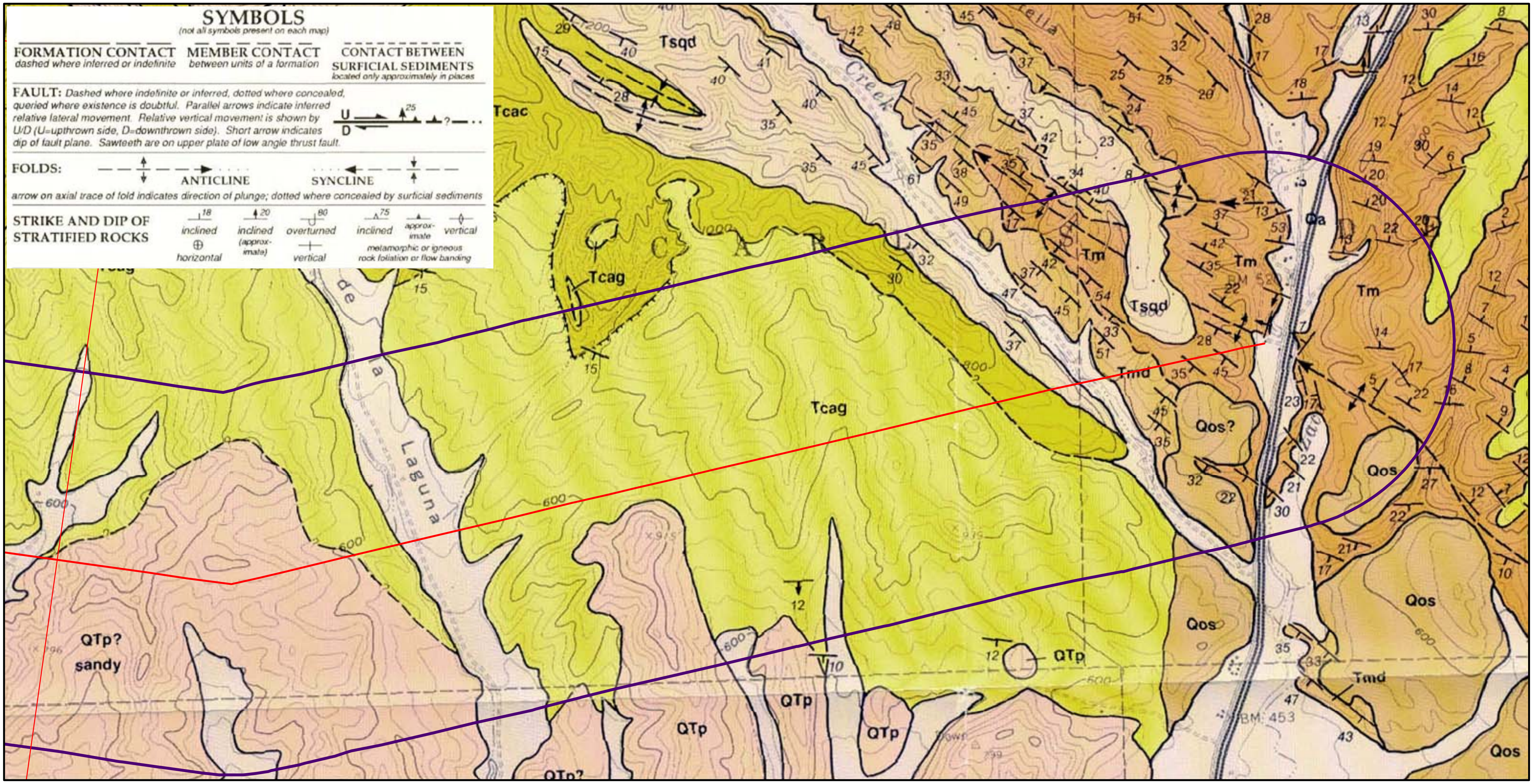
FIGURE 4.6-1 Map 3
Geologic Features
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 1,000 2,000 Feet

Scale: 1:24,000

Rev. 6: 06/29/2009



Cabrillo - Santa Ynez Power Line

Half-mile Radius Around Power Line

City Boundary

FIGURE 4.6-1 Map 4
Geologic Features
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1,000 2,000 Feet

Scale: 1:24,000

Rev. 6: 06/29/2009

Qg

Qg *stream channel deposits of gravel, sand and silt*

Qa

SURFICIAL SEDIMENTS

Qa *valley, floodplain and stream channel alluvial deposits of gravel, sand, and clay; dissected only by active stream channels*

Qls

LANDSLIDE DEBRIS

Qoa
Qo

OLDER DISSECTED SURFICIAL SEDIMENTS

remnants of weakly indurated older alluvial sediments
Qoa *older alluvial gravel, sand, and clay*
Qo *Orcutt Sand: tan to rusty brown, wind-deposited sand; locally pebbly at base*

—UNCONFORMITY—

QTps
QTp

PASO ROBLES FORMATION

weakly consolidated valley alluvial sediments, deposited by streams that drained from rising San Rafael Mountains; Pleistocene and latest Pliocene(?) age
QTps *light gray to tan pebbly sand west of Canada Laguna; with 0–66 ft (0–2m) of fresh water gray-white marly limestone (Los Alamos Marl) at base; sand and limestone disappear eastward*
QTp *light gray conglomerate or gravel composed of white siliceous shale pebbles of Monterey Shale in sandy to clayey matrix; crudely to cross-bedded, includes pebbly sand and greenish gray claystone; mostly pebbly sand and clay in Santa Rita Valley area*

Tcag
Tcac

CAREAGA SANDSTONE

shallow marine clastic regressive, weakly indurated; late Pliocene age
(of Woodring and Bramlette 1950)
Tcag *Graciosa Member: massive gray-white to tan soft sandstone or sand, in part nonmarine and wind deposited, locally pebbly at base*
Tcac *Cebada Member: massive tan to yellow, soft, fine grained sandstone or sand; includes a thin fossiliferous calcareous layer at top locally*

—UNCONFORMITY—

Tf

FOXEN CLAYSTONE

(of Woodring and Bramlette 1950)
marine clastic; middle to late Pliocene age
Tf *gray, soft, massive claystone or siltstone, crumbly where weathered*

Tsq
Tsqb
Tsqd

SISQUOC FORMATION

marine biogenic to clastic; late Miocene age (Late Mohnian-Delmontian Stage)
Tsq *light gray, soft, slightly diatomaceous claystone*
Tsqd *mostly cream-white diatomaceous claystone or shale; semi-siliceous, massive to vaguely bedded, coherent, impervious, but closely fractured, crumbly where weathered; includes nearly white, somewhat punky bedded diatomite in upper part*
Tsqb *burned shale within basal* **Tsqd**: *once partly molten by underground combustion; occurs as brown, red and yellow, frothy, subglassy rock, below Careaga tar sand at Redrock Mountain; described by Eldridge (1901)*

Tmd
Tm
Tml

MONTEREY SHALE

marine biogenic; middle and late Miocene age
Tmd *uppermost local unit: nearly white, soft, punky, laminated diatomite; includes thin layers (few inches or centimeters thick) of gray chert locally; probably Mohnian Stage*
Tm *upper shale unit: constitutes major part of Monterey Shale in Purisima Hills; siliceous shale; dark gray-brown; bituminous, weathers white, laminated, hard, thin bedded platy shale to closely fractured brittle, gray, cherty shale; includes thin layers of soft fissile shale; Mohnian Stage*
Tml *lower shale unit in Santa Rita Hills: semi-siliceous shale, soft, fissile to punky, thin bedded, gray-brown shale that weathers cream-white; contains abundant diatom debris, foraminifera, and fish scales; includes some hard, platy siliceous shale and occasional thin, hard, light gray to yellow-tan dolomite-limestone layers; lower Mohnian-Luisian-Relizian Stages (Woodring and Bramlette 1950)*

- **Sisquoc Formation (Tcac; late Miocene age):** This formation consists of mostly white diatomaceous claystone or shale. It is described as semisiliceous, massive to vaguely bedded, impervious, but closely fractured and crumbly where weathered.
- **Careaga Sandstone (Tcag, Tcac; late Pliocene age):** This sandstone is mostly shallow marine in origin and consists of the upper Graciosa Member (Tcag) and the lower Cebada Member (Tcac). The Graciosa Member is massive gray-white to tan soft sandstone or sand. It is in part nonmarine and wind deposited.
- **Paso Robles Formation (QTp; Pleistocene and latest Pliocene age):** This formation comprises weakly consolidated nonmarine valley alluvial sediments consisting of light gray conglomerate or gravel composed of white siliceous shale of the Monterey Formation in a sandy to clayey matrix. It is crudely- to cross-bedded and includes pebbly sand and greenish gray claystone. In the Santa Rita Valley area, the Paso Robles Formation consists primarily of pebbly sand and clay.
- **Older Dissected Surficial Sediments (Qoa, Qo; Pleistocene age):** These sediments are weakly indurated older alluvial sediments (Qoa) consisting of gravel, sand, and clay. The Orcutt Sand (Qo) is a tan to reddish brown, wind-deposited sand. These deposits occur primarily within Santa Rita Valley.
- **Surficial Sediments (Qa; Holocene/Recent age):** These are unconsolidated floodplain and stream channel alluvial deposits of gravel, sand, and clay infilling the valley areas and active stream channels.

The Careaga Sandstone, Paso Robles Formation, and younger alluvial sediments contain the primary aquifers serving the Santa Ynez-Lompoc region.

Project Area Soil Descriptions

The USDA Natural Resources Conservation Service (NRCS) soil survey (Shipman et al., 1972) and online database for the Project area were reviewed, in addition to the geologic units described above. The NRCS data generally describe soil profiles that extend into the unconsolidated material in which the soil formed or from the surface down to bedrock. As described by the NRCS, there are a variety of soil types in the Project area, with fine sandy loam to clay loam being the predominant soil types. One area east of Crawford Canyon at Pole 95 is mapped as "landslides" (LaF). An older quarry, characterized as "Mine Pits and Dumps (MpG)," is located near the west end of the power line near the Santa Ynez River. There are no active mines, quarries or potential mineral resources within or near the power line and there is no historical information available on the land mapped as MpG. A detailed map from the NRCS depicting the distribution of the various soil types along the power line corridor is shown in Figure 4.6-2, Soil Units in the Project Area. The soil units shown on the map are summarized in Table 4.6-1.

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

PG&E

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FIGURE 4.6-2 Map 1
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 2
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID

Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 3

Soil Units in Project Area

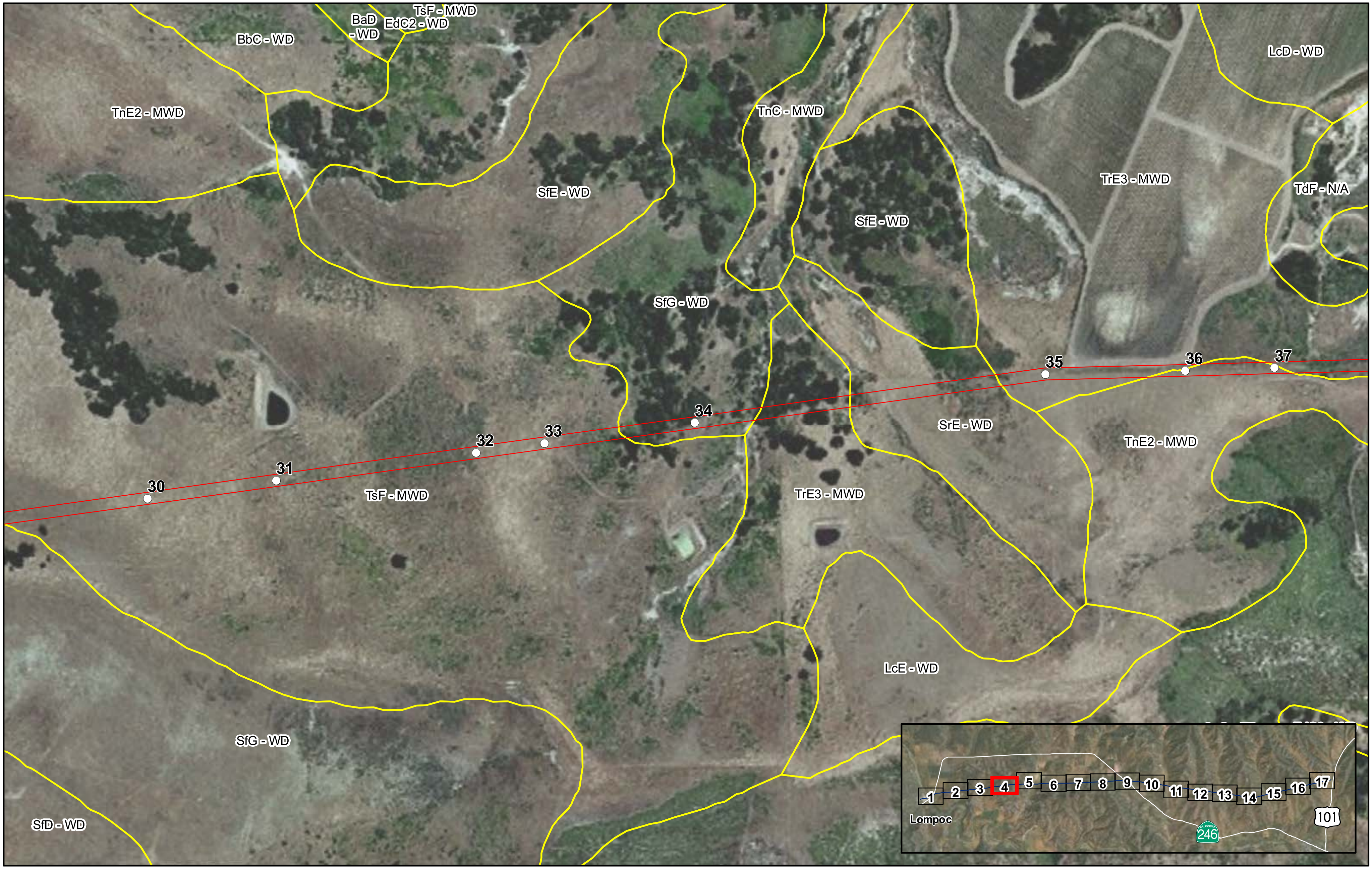
Cabrillo - Santa Ynez

115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200



Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 4

Soil Units in Project Area

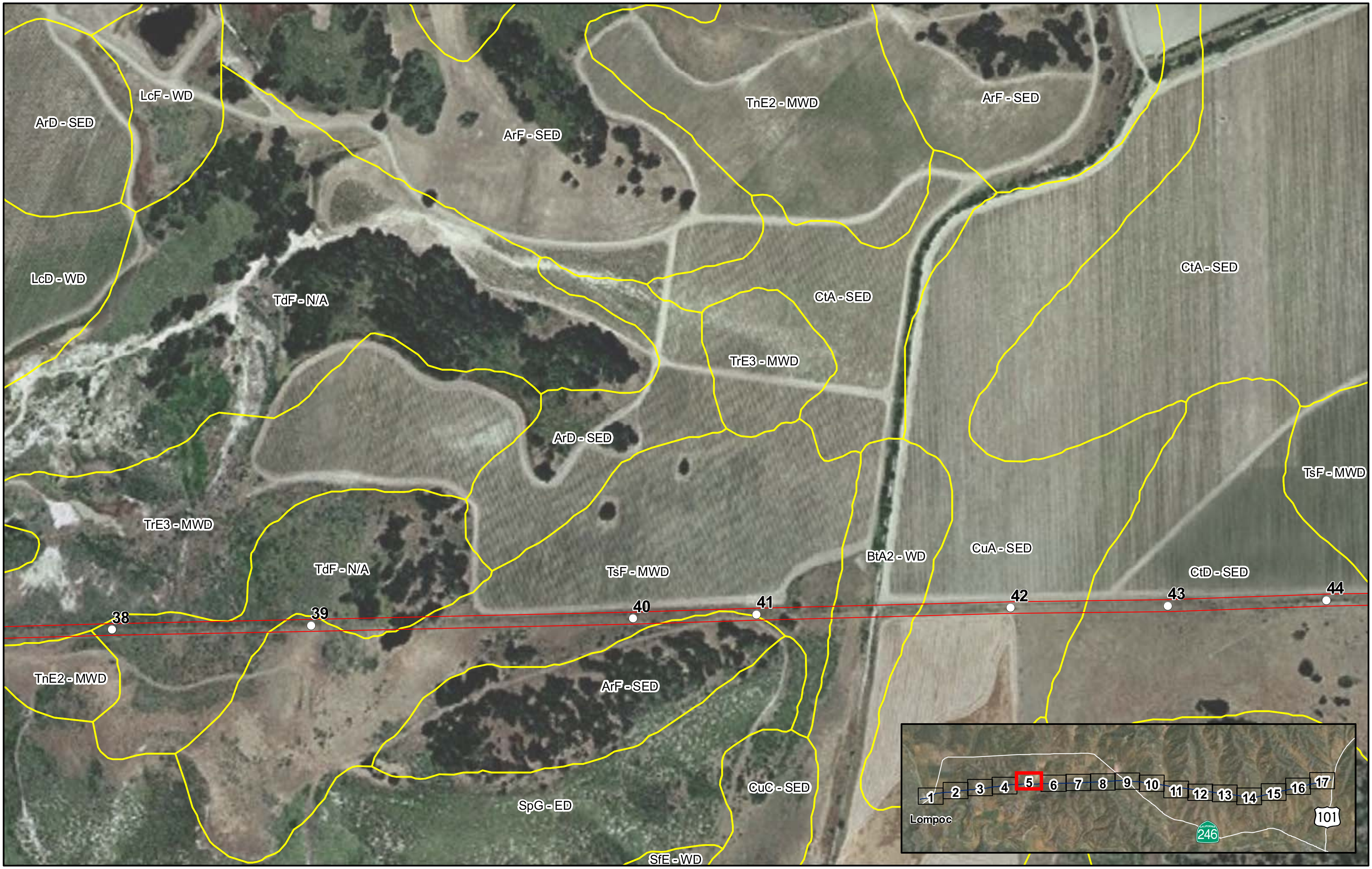
Cabrillo - Santa Ynez

115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200



Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID

Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 5

Soil Units in Project Area

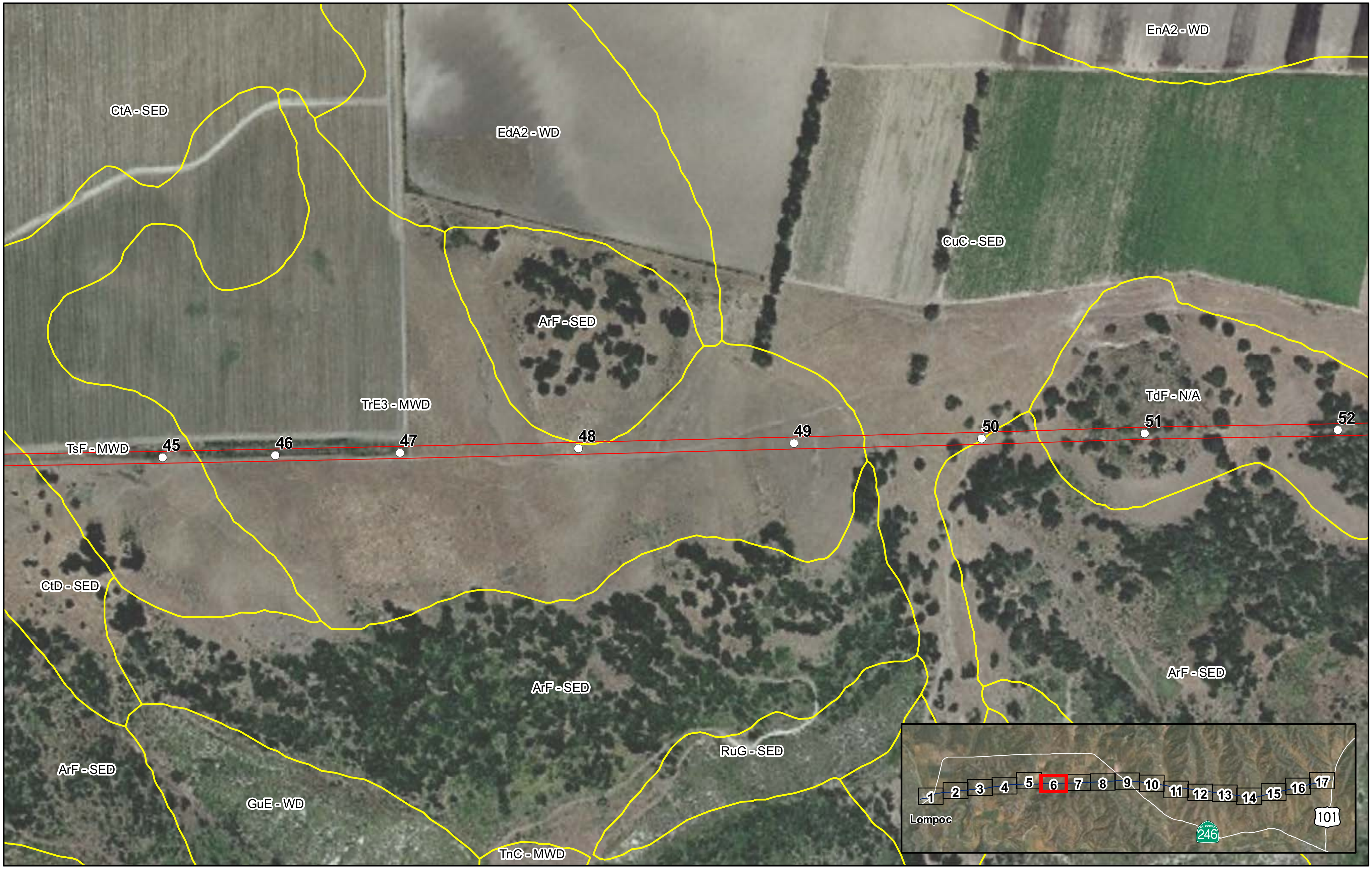
Cabrillo - Santa Ynez

115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200



Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID   Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 6

Soil Units in Project Area

Cabrillo - Santa Ynez

115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID

Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 7

Soil Units in Project Area

Cabrillo - Santa Ynez

115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles

Power Line ROW (40')

Soil Class Unit Boundary

ArD - SED

Soil Unit ID

Soil Drainage Class

See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 8

Soil Units in Project Area

Cabrillo - Santa Ynez

115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 9
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 10
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

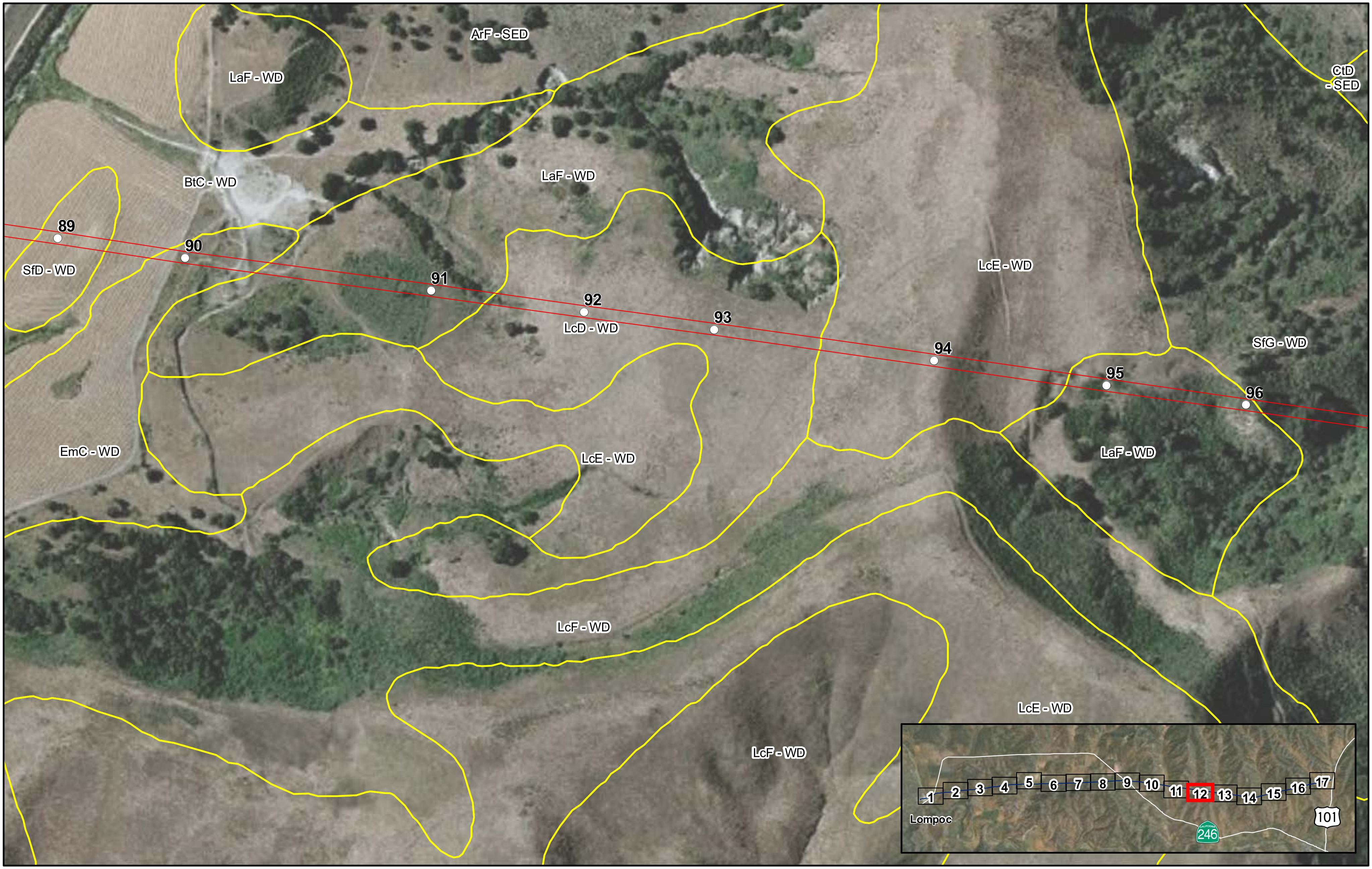
Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 11
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200



Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 12
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 13
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 14
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 300 600 Feet

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 15
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 16
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Power Poles
Power Line ROW (40')
Soil Class Unit Boundary

ArD - SED
Soil Unit ID
Soil Drainage Class
See accompanying table for definitions.

Rev. 6: 06/29/2009

FIGURE 4.6-2 Map 17
Soil Units in Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 300 600 Feet

N

Scale: 1:5,200

Expansive and Collapsible Soils

Expansive soils are those that contain significant amounts of clays that expand when wetted and can cause damage to foundations if moisture collects beneath structures. According to geologic maps, the geologic units within the alignment are primarily composed of sand, with lesser amounts of silt and clay; therefore, the potential for encountering expansive soils throughout most of the Project alignment is relatively low. The east end of the alignment (Poles 132 -134), however, is underlain by the Monterey Shale, a fine-grained formation containing expansive clays. Also, several of the soil units mapped by the NRCS as shown in Figure 4.6-2 and on Table 4.6-1 consist of clay loams with moderate to high shrink-swell potential. The soil profiles described by the NRCS are generally less than 6 feet in depth and in many cases the clayey soil units are developed over consolidated bedrock less than 3 feet deep. Expansive soil is a critical factor in the design of building foundations, but will not have a significant effect on the power poles which will extend 11 to 13.5 feet below the ground surface.

TABLE 4.6-1
Soil Units in the Project Area
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Map Unit	Map Unit Name	Map Unit	Map Unit Name
ArD	Arnold sand, 5 to 15 percent slopes	LsF	Los Osos-San Benito clay loams, 30 to 45 percent slopes
ArF	Arnold sand, 15 to 45 percent slopes	MaC	Marina sand, 2 to 9 percent slopes
ArF3	Arnold sand, 9 to 45 percent slopes, severely eroded	MaE	Marina sand, 9 to 30 percent slopes
BaC	Ballard fine sandy loam, 2 to 9 percent slopes	MaE3	Marina sand, 9 to 30 percent slopes, severely eroded
BaD	Ballard fine sandy loam, 9 to 15 percent slopes	MnA	Metz loamy sand, 0 to 2 percent slopes
BbA	Ballard gravelly fine sandy loam, 0 to 2 percent	MnC	Metz loamy sand, 2 to 9 percent slopes
BbC	Ballard gravelly fine sandy loam, 2 to 9 percent slopes	MoA	Metz loamy sand, overflow, 0 to 2 percent slopes
BtA	Botella clay loam, 0 to 2 percent slopes	MpG	Mine pits and dumps
BtA2	Botella clay loam, 0 to 2 percent slopes, eroded	Mr	Mocho sandy loam, overflow
BtC	Botella clay loam, 2 to 9 percent slopes	Mu	Mocho fine sandy loam
BtD2	Botella clay loam, 2 to 15 percent slopes, eroded	Mv	Mocho loam
Ca	Camarillo sandy loam	Mw	Mocho loam, overflow
Cc	Camarillo very fine sandy loam	Mx	Mocho silty clay loam
CeE2	Chamise sandy loam, 5 to 30 percent slopes, eroded	NvC	Narlon sand, hardpan variant, 2 to 9 percent slopes
ChF	Chamise shaly loam, 15 to 45 percent slopes	PtC	Positas fine sandy loam, 2 to 9 percent slopes
ChG2	Chamise shaly loam, 30 to 75 percent slopes, eroded	PtE	Positas fine sandy loam, 15 to 30 percent slopes
CkF	Chamise clay loam, 30 to 45 percent slopes	Rs	Riverwash
CtA	Corralitos sand, 0 to 2 percent slopes	RuG	Rough broken land

TABLE 4.6-1
Soil Units in the Project Area
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Map Unit	Map Unit Name	Map Unit	Map Unit Name
CtD	Corralitos sand, 2 to 15 percent slopes	SdA	Salinas silty clay loam, 0 to 2 percent slopes
CtD2	Corralitos sand, 2 to 15 percent slopes, eroded	SdC	Salinas silty clay loam, 2 to 9 percent slopes
CuA	Corralitos loamy sand, 0 to 2 percent slopes	SfD	San Andreas-Tierra complex, 5 to 15 percent slopes
CuC	Corralitos loamy sand, 2 to 9 percent slopes	SfE	San Andreas-Tierra complex, 15 to 30 percent slopes
CuD	Corralitos loamy sand, 9 to 15 percent slopes	SfF3	San Andreas-Tierra complex, 9 to 45 percent slopes, severely eroded
CwF	Crow Hill loam, 30 to 45 percent slopes		
CwG	Crow Hill loam, 45 to 75 percent slopes	SfG	San Andreas-Tierra complex, 30 to 75 percent slopes
DaE	Diablo silty clay, 15 to 30 percent slopes	Sh	Sandy alluvial land
DaD	Diablo silty clay, 9 to 15 percent slopes	SmF	Santa Lucia shaly clay loam, 30 to 45 percent
EdA	Elder sandy loam, 0 to 2 percent slopes	SmF2	Santa Lucia shaly clay loam, 15-45 percent slopes eroded
EdA2	Elder sandy loam, 0 to 2 percent slopes, eroded	SmG	Santa Lucia shaly clay loam, 45 to 75 percent slopes
EdC2	Elder sandy loam, 2 to 9 percent slopes, eroded	SnC	Santa Ynez gravelly fine sandy loam, 2 to 9 percent slopes
EdD2	Elder sandy loam, 9 to 15 percent slopes, eroded	SnD	Santa Ynez gravelly fine sandy loam, 9 to 15 percent slopes
EmA	Elder loam, 0 to 2 percent slopes	SoC	Santa Ynez clay loam, 2 to 9 percent slopes
EmC	Elder loam, 2 to 9 percent slopes	SpG	Sedimentary rock land
EnA2	Elder shaly loam, 0 to 2 percent slopes, eroded	SrE	Shedd silty clay loam, 15 to 30 percent slopes
EnC2	Elder shaly loam, 2 to 9 percent slopes, eroded	SsE	Shedd silty clay loam, diatomaceous variant, 15 to 30 percent slopes
EnD2	Elder shaly loam, 9 to 15 percent slopes, eroded		
GmE	Gaviota sandy loam, 15 to 30 percent slopes	SsF	Shedd silty clay loam, diatomaceous variant, 30 to 45% slopes
GsD	Gazos clay loam, 9 to 15 percent slopes	StC	Sorrento sandy loam, 2 to 9 percent slopes
GsE	Gazos clay loam, 15 to 30 percent slopes	SvC	Sorrento loam, 2 to 9 percent slopes
GsF	Gazos clay loam, 30 to 45 percent slopes	TdF	Terrace escarpments, loamy
GuE	Gullied land	TnC	Tierra sandy loam, 2 to 9 percent slopes
LaF	Landslides	TnD2	Tierra sandy loam, 9 to 15 percent slopes, eroded
LcD	Linne clay loam, 9 to 15 percent slopes	TnE2	Tierra sandy loam, 15 to 30 percent slopes, eroded
LcE	Linne clay loam, 15 to 30 percent slopes	TrC	Tierra loam, 2 to 9 percent slopes
LcF	Linne clay loam, 30 to 45 percent slopes	TrD	Tierra loam, 9 to 15 percent slopes

TABLE 4.6-1
Soil Units in the Project Area
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Map Unit	Map Unit Name	Map Unit	Map Unit Name
LcG	Linne clay loam, 45 to 75 percent slopes	TrE2	Tierra loam, 15 to 30 percent slopes, eroded
LdG	Lodo loam, 30 to 75 percent slopes	TrE3	Tierra loam, 5 to 30 percent slopes, severely eroded
LmG	Lopez shaly clay loam, 15 to 75 percent slopes	TsF	Tierra clay loam, 15 to 45 percent slopes
LsE	Los Osos-San Benito clay loams, 15 to 30 percent slopes	W	Water

Soils that collapse during wetting typically occur in the unconsolidated alluvial deposits when increased moisture causes chemical or physical bonds between the soil particles to weaken. This allows the structure of the soil to collapse and the ground surface to subside. Potentially collapsible soils may be present in the alluvial drainages that intersect the power line corridor. According to hazard maps in the Comprehensive Plan (Santa Barbara County, 1979), the overall potential for collapsible soils is low for the Project area.

Subsidence

Subsidence, as referred to in the Comprehensive Plan (Santa Barbara County, 1979), involves deep-seated settlement due to the withdrawal of fluid (oil, natural gas, or water). Subsidence can sometimes be measured in tens of feet and typically occurs in broad valleys underlain by thick sequences of alluvial sediments. The Comprehensive Plan states that there are no areas within the County where subsidence has been a problem, so impacts to the power line from potential subsidence will be less than significant, and no mitigation is required.

Landslides

A landslide is defined as the slipping down or flowing of a mass of land (rock, soil, and debris) from a mountain or hill. Landslide potential is high in steeply sloped areas underlain by alluvial soils or thinly bedded shale or clayey bedrock formations where the bedding planes are oriented in an out-of-slope direction (bedding plane angles that are greater than horizontal, but less than the slope face). Where down-slope soil creep or nearly imperceptible movement occurs, landslide potential is also high.

According to published geologic maps (Dibblee, 1988, 1993a-b), there are no known or mapped landslides along the Cabrillo – Santa Ynez power line corridor. However, the USDA map in Figure 4.6-2 shows two landslide areas, one of which is at Pole 95 (refer to Figure 4.6-2, Map 12). Bedding planes of the Monterey Shale adjacent to Santa Ynez Switching Station dip greater than 35 degrees into the slope, but the fractured nature of the shale and steep slopes in this area make it susceptible to landsliding.

Based on review of processed LiDAR topographic data and stereo-pairs of 1:7,200-scale color aerial photography (frames KAV10205 1-2 through 3-8, 47 frames total) dated May 9, 2008, several potential landslide areas are present along the power corridor. The surface expression of landslide-related features mapped along the power corridor is subdued, with the exception of well-expressed recent slides located downhill of Pole 38, suggesting these features are relatively old (Figure 4.6-2, Map 5). However, the mapped slides still are potentially active and may experience movement during large earthquakes or periods of significant precipitation. Of these locations, only Pole 95 is located within a mapped landslide (Figure 4.6-2, Map 12). No evidence is seen of recent movement of the landslide but this location is of potential long-term concern for slope stability. Poles 60, 62, and 93 are located upslope of active gullies (Figure 4.6-2, Maps 8 and 12). Although sited on apparently stable hillside deposits, these pole locations may be exposed to erosion-related instability issues, depending on rates of upslope gully encroachment.

Erosion

Erosion is the process by which rocks and soil and other land materials are abraded or worn away from the earth's surface over time. The rate of erosion depends on many factors, including soil type and geologic parent materials, slope and placement of soils, and human activity. The potential for erosion is highest in loose, unconsolidated soils. The steepness of slopes and absence of vegetation are also factors that increase the natural rates of erosion. Thus, erosion potential is high in steep, unvegetated areas, especially those disturbed by grading or other construction activities.

A soil's susceptibility to erosion varies and is a function of its characteristics such as soil texture, soil structure, topography (steepness of slope), amount of surface cover (vegetative or other), and climate. Erosion from water mainly occurs in loose soils on moderate to steep slopes, particularly during high-intensity storm events. Soil and bedrock materials along the power line corridor are primarily composed of Quaternary age, weakly consolidated sandy materials and clayey floodplain deposits in the lower alluvial drainages. Soil types, according to the USDA (2009) maps, consist of clayey silty loam to sandy loam. Fractured shales of the Monterey Formation are exposed near Santa Ynez Switching Station. The Careaga Sandstone, which is composed of soft sandstone and sand that is in part wind deposited, is susceptible to erosion. The potential for erosion varies across the Project area and is low to moderate in the flat-lying areas in the western part of the corridor and moderate to high in the steeper terrain in the eastern part of the corridor. Review of aerial photographs reveals significant erosion adjacent to Poles 62 and 93 (refer to Figure 4.6-2, Maps 8 and 12). In addition, many of the soil types described by the USDA in the Project area are described as eroded or severely eroded.

Seismicity

The Project area lies within a seismically active region given the presence of several active and potentially active faults, including potential seismicity associated with blind thrust faulting. It is likely that the Project area will experience at least one moderate to major earthquake during its service life. According to the 2007 Working Group on California Earthquake Probabilities, there is a 97 percent chance of a Magnitude 6.7 or greater earthquake occurring in southern California within the next 30 years (2007 Working Group on California Earthquake Probabilities, 2008). The probability of a Magnitude 7.5 or greater event occurring in the next 30 years is 37 percent (2007 Working Group on California Earthquake Probabilities, 2008).

Federal, state, and local agencies are commonly relied upon when determining the presence and activity of a seismic hazard. For the purposes of this report, the following sources were used to identify faults that may potentially impact the site:

- USGS
- CGS
- Caltrans Office of Earthquake Engineering
- Seismic Safety and Safety Element of the Comprehensive Plan

The Caltrans Office of Earthquake Engineering has developed a California Seismic Hazard Map (CSHM) showing the location of faults in the state of California (Mulchin, 1996). The map shows peak bedrock acceleration based on the maximum credible earthquake (MCE) or deterministic event that applies to the transportation infrastructure in California. These sources were used in the following sections to document the faults and seismic hazards near the Project area.

Seismic Parameters

Earthquakes, their causative fault sources, and the resultant ground motions are measured by a number of parameters, including magnitude, intensity, fault length, rupture area, MCE, and peak-ground acceleration. These seismic parameters are used to evaluate and compare earthquake events, seismic hazard potential, and levels of ground shaking. The seismic parameters referenced in this section are discussed below:

Magnitude (M). Magnitude refers to the size of an earthquake, which is measured by a number of methods. Several of these—including the Richter (M_L), surface wave (M_S), and body wave (M_b) methods—evaluate the magnitude of an earthquake by measuring the amplitude of seismic waves as recorded by a seismograph. Because of the instrumental properties of seismographs, these methods provide inconsistent results above or below a certain range of magnitudes. A more consistent and preferred measure of magnitude is the moment magnitude (M_W). Evaluation of M_W is based on the seismic moment of an earthquake, which is described as the leverage of forces across the area of fault slip. Moment magnitude is a consistent measurement of size because it is directly related to the area of fault rupture during an earthquake. Unless otherwise noted, moment magnitude is used elsewhere in this document where earthquake magnitudes are discussed.

Maximum Credible Earthquake. Geometric fault parameters are used to estimate the MCE that can be produced by a given fault or fault segment. Based on empirical relationships between potential area of rupture and earthquake magnitude, the MCE is a rational and believable event that can be supported by the geologic evidence of past displacement and the recorded seismic history of the region. MCEs for the faults in the Project area were obtained from the CSHM (Mulchin, 1996), the Southern California Earthquake Center (SCEC) (2009), the California Geological Survey Fault Database (CGS, 2008), and/or from the USGS Earthquake Hazards Program (USGS, 2009).

Attenuation. In an earthquake, sudden rupture or displacement along a fault releases energy in the form of seismic waves, which travel from the source. The amount of energy released by an earthquake is related to its magnitude. Seismic waves travel through the earth, causing displacements or movements of the ground. As waves travel away from the source, their energy is both absorbed and spread over an increasingly larger area. The amount of acceleration, velocity, and displacement caused by the passage of seismic waves decreases with distance from the source through attenuation. Thus, both the distance from the seismic source and earthquake magnitude affect the amount of wave energy reaching a given location. A number of empirical attenuation models, which describe the relationship between the amplitude of ground motion, earthquake magnitude, and distance, have been developed based on analysis of past earthquake motions. These models are used to estimate ground motions resulting from potential future earthquakes.

Acceleration. Acceleration is the rate of change of the velocity of particles within the ground or structures caused by the passage of seismic waves. The peak ground acceleration (PGA) is the highest acceleration - expressed as a fraction of the acceleration due to gravity (g) - experienced at a site due to the passage of seismic waves. The PGA is dependent on a number of factors, including earthquake magnitude, distance from source, and soil type. For the Project area, ground motion was estimated using CSG's Probabilistic Seismic Hazards Mapping Ground Motion Page (CGS, 2008), which is based on the USGS/CGS Probabilistic Seismic Hazards Assessment Model, 2002 (revised 2003). Ground motions based on a 10 percent probability of being exceeded in 50 years are provided for firm rock, soft rock, and alluvium. Spectral accelerations at short (0.2 second) and long (1.0 second) periods are also calculated. Spectral acceleration (Sa) is approximately what is experienced by a building, as modeled by a particle mass on a massless vertical rod having the same natural period of vibration as the building (CGS, 2008).

Fault Classification

Faults are classified as Historic, Holocene, Late Quaternary, Quaternary, or Pre-Quaternary according to the following criteria:

- Historic: Fault displacement has occurred within the past 200 years.
- Holocene: Shows evidence of fault displacement within the past 11,000 years but without historic record.
- Quaternary: Shows evidence of displacement sometime during the past 1.6 million years.
- Pre-Quaternary: No evidence of displacement during the past 1.6 million years.

Historic and Holocene faults are classified as active faults by CGS, and Quaternary faults are classified as potentially active for the purpose of evaluation for possible zonation under the Alquist-Priolo Special Studies Zones Act of 1972 (Bryant and Hart, 2007).

Earthquake Fault Zones

The Alquist-Priolo Special Studies Zones Act of 1972 requires the establishment of "earthquake fault zones" (formerly known as "special studies zones") along known active faults in California. Strict regulations on development within these zones are enforced to reduce the potential for damage due to fault displacement.

An active fault is defined as a fault that has "had surface displacement within Holocene time (about the last 11,000 years)." Under the Alquist-Priolo Earthquake Fault Zoning Act, "sufficiently active" and "well-defined" faults constitute the present criteria used to designate an "earthquake fault zone." A fault is defined as sufficiently active if there is evidence of Holocene surface displacement along one or more of its segments or branches.

A fault is classified as well-defined if its trace is clearly detectable by a trained geologist as a physical feature at or just below the ground surface (Bryant and Hart, 2007). As a result, only faults or portions of faults with relatively high potential for ground rupture are zoned, while other faults that may partially meet the criteria are not zoned. The potential for fault rupture therefore is not limited solely to faults or portions of faults delineated as "earthquake fault zones." In the vicinity of the Project power line, the Los Alamos segment of the Los Alamos-Baseline fault has been designated as an Alquist-Priolo earthquake fault zone. It is located approximately 3.4 miles north of the power line.

Faults in the Project Area

Faults that have a potential to impact the Project area are listed in Table 4.6-2. These faults show evidence of Quaternary displacement and are recognized as active or potentially active. The locations of these faults relative to the Project area are shown in Figure 4.6-3, Earthquake Fault Map. Approximate distances of the nearest point along the power line alignment to the faults and MCE magnitude for each of the faults are summarized in Table 4.6-2.

The Santa Ynez River fault is approximately 37 miles long and has an east-west trend. The fault branches off the Santa Ynez fault to the east and terminates near the coast just north of the Honda fault. The fault parallels the power line corridor and, at its closest point just west of SR 246, the fault is within 1,500 feet of the power line. According to the CSHM (Mulchin, 1996), this fault is capable of generating an MCE magnitude of 7.5.

The Honda fault is located west-southwest of Cabrillo Substation approximately 3.4 miles south of the Santa Ynez River fault. The fault trends east-west for approximately 7 miles between the coast near Point Perdernales and Lompoc. The eastern end of the Honda fault is located less than 1 mile southwest of Cabrillo Substation. The CSHM (Mulchin, 1996) indicates an MCE magnitude of 6.25.

The Los Alamos and Baseline faults form a single trace extending approximately 30 miles from Los Alamos to the Santa Ynez Mountains. The fault zone trends northwest and is located approximately 3.4 miles north-northeast of Santa Ynez Switching Station. A 2.6-mile segment of the Los Alamos fault between Los Alamos and San Antonio Creek is zoned as active under the Alquist-Priolo Earthquake Fault Zoning Act. The southeast end of the "zoned" segment is located approximately 3.4 miles due north of Santa Ynez Switching Station. The estimated slip rate along this fault is 0.7 millimeters per year (mm/yr) based in part on dip-slip displacement of a soil horizon (Guptil et al., 1981). The MCE for the Los Alamos-Baseline fault zone, according to the CSHM (Mulchin, 1996), is 6.75.

REFERENCES:
SANTA YNEZ VALLEY COMMUNITY PLAN EIR, 2008;
CALTRANS OFFICE OF EARTHQUAKE ENGINEERING, 1996

FIGURE 4.6-3
Earthquake Fault Map
Cabrillo-Santa Ynez 115 kV Reconductoring Project

TABLE 4.6-2
Regional Faults within 15 Miles of the Project Site
Cabrillo - Santa Ynez 115 kV Reconductoring Project

Fault Name	Approximate Distance from Project Site		Length[a,c]		Slip Rate[b,c] (mm/yr)	Maximum Credible Earthquake Magnitude[a] (Mw)
	(mi)	(km)	(mi)	(km)		
Santa Ynez River	0.3	0.48	37	60	NA	7.50
Honda	0.9	1.45	7	11	NA	6.25
Los Alamos-Baseline	3.4	5.5	30	48	0.7	6.75
Lion's Head	3.6	5.8	25	40	0.02	6.50
Santa Ynez-West	7.5	12	25	40	1.0 to 5.0	7.50
Santa Ynez-South	7.5	12	9	14	0.2 to 1.0	7.50
Pacifico	8	13	14	23	0.2	6.50
Santa Maria River-Foxen Canyon	10	16	49	79	NA	6.50
Casmalia	12	19.3	29	47	0.3	6.75

Data Sources:
[a] Caltrans Seismic Hazard Map.
[b] California Geological Survey Fault Database (2008).
[c] USGS Earthquake Hazards Program (2009).

The next-closest fault to the power line is the Lion's Head fault which extends west-northwest a distance of approximately 25 miles. The fault extends offshore west of Casmalia. The southern segment of the fault is located approximately 3.6 miles north of the power line, as shown in Figure 4.6-3. The fault is considered active and has an estimated slip rate of 0.02 mm/yr based on offset marine terraces (Clark, 1990). The MCE for this fault is 6.50 (Mulchin, 1996).

The Santa Ynez (western segment and south branch), Pacifico, and Casmalia faults and the Santa Maria River-Foxen Canyon fault system are all active or potentially active faults that are located more than 5 miles from the Project area. The estimated slip rates along these faults range from 0.2 mm/year on the Pacifico fault (USGS, 2009) to between 1 and 5 mm/year on the western segment of the Santa Ynez fault (USGS, 2009). There are several other unnamed faults in the region that displace older Tertiary deposits.

There are no known active or potentially active faults that cross the power line corridor. However, as shown in Figure 4.6-1, Map 2, there is an unnamed fault mapped by Dibblee (1993a), possibly a splay of the Santa Ynez River fault, that trends northeast toward the power line corridor. The fault displaces older Tertiary bedrock with no mapped expression within younger Quaternary deposits.

Historical Earthquakes

There have been several notable earthquakes in the region with magnitudes (M_L) ranging from 5.1 to 7.1. The earliest recorded earthquake, according to the SCEC (2009), occurred

8 miles southwest of Santa Barbara in 1925. The 6.1 M_L earthquake caused about $8 million of damage and resulted in 13 deaths. In the business district, an area of 36 blocks, most buildings sustained significant damage and had to be demolished and rebuilt.

The Lompoc earthquake, which occurred on the early morning November 4, 1927, was centered about 10 miles offshore and was one of the most powerful in southern California this past century. It was fortunate that the earthquake occurred offshore and in a sparsely populated area at the time, so damage was lighter than would be expected from a 7.1 M_L quake. In the coastal area near the epicenter, sand and water were "fountained" creating up to 20 "sand craters" (SCEC, 2009). The earthquake also produced a seismic sea wave that was recorded to be approximately 6 feet high at Surf and Pismo Beach.

Two other earthquakes to shake the Santa Barbara County area occurred on June 30, 1941 and August 13, 1978. The 1941 earthquake was centered 6 miles southeast of Santa Barbara and had a measured magnitude of 5.5 M_L. The shaking from this quake, which was felt as far away as Mojave, Lake Arrowhead, and San Diego, resulted in cracked walls, streetlights that snapped, and goods thrown from store shelves. The 1978 earthquake occurred less than 1 mile southeast of Santa Barbara and had a measured magnitude of 5.1 M_L, although there is some dispute over the exact magnitude of this earthquake (SCEC, 2009). The damage caused by this earthquake was excessive, resulting in 65 injuries and damages of approximately $15 million (SCEC, 2009).

Fault Rupture

A number of active and potentially active faults have been identified in the vicinity of the Project area. The power line corridor does not cross any active or potentially active faults, although the corridor is located within 1,500 feet of the Santa Ynez River fault in the Santa Rita Valley area west of SR 246. The "zoned" segment of the Los Alamos fault is located almost 3.5 miles north of the power line; therefore, fault rupture potential is considered low. However, there is an unnamed fault, possibly a splay of the Santa Ynez River fault, that trends northeast toward the power line corridor in the vicinity of Pole 60 (Figure 4.6-1, Map 2). The fault displaces older Tertiary bedrock, and its northward extension is buried beneath younger Quaternary deposits.

Strong Ground Motions

It is likely that the power line will be exposed to at least one moderate or greater earthquake during its service life. Strong shaking from an earthquake can result in structural damage and can trigger other geologic hazards such as landslides, debris flows, and liquefaction.

Ground shaking is controlled by the earthquake magnitude and distance from the source. Ground conditions will also influence impacts from ground motions. For instance, a structure founded on dense or hard soils, including bedrock, will attenuate ground shaking, whereas unconsolidated, loose, or wet soils will amplify them.

For the Project power line corridor, PGAs based on the USGS seismic hazard map (USGS, 2008) and the 10 percent probability of being exceeded in 50 years are estimated to range from 0.20g to 0.25g. The CGS (2008) Probabilistic Ground Motion Page estimates PGAs to be as high as 0.37g for firm rock, 0.377g for soft rock, and 0.414g for alluvium. According to the CSHM (Mulchin, 1996), the PGA based on an MCE of 7.5 on the Santa Ynez River fault is estimated to be 0.6g or more. Because of the length of the power line corridor, peak accelerations will vary across the length of the corridor and may be higher than estimated for a particular structure within the corridor. Generally, overhead power lines can accommodate strong ground shaking.

Liquefaction

Liquefaction is a phenomenon in which saturated, cohesionless soils such as sand and silt temporarily loose their strength and liquefy when subjected to dynamic forces such as intense and prolonged ground shaking during an earthquake. Liquefaction typically occurs when groundwater is shallow (less than 50 feet below ground surface) and soils are predominantly granular and unconsolidated. The potential for liquefaction increases with shallower groundwater.

The potential for liquefaction in the Project area is considered to be low to moderate. Depth to groundwater in the Project area ranges from approximately 20 feet to more than 200 feet (California Department of Water Resources, 2009). In areas of exposed or near-surface bedrock, the potential for liquefaction is low. In the intervening valleys filled with Recent alluvial deposits where groundwater is shallow, the potential for liquefaction is high. The Comprehensive Plan (Santa Barbara County, 1979) indicates that the Santa Ynez River area and several of the north-south canyons that cross the power line have low to moderate potential for liquefaction. The highest potential for liquefaction occurs within and adjacent to the Santa Ynez River at the west end of the Project near Cabrillo Substation.

4.6.4 Potential Impacts and Mitigation

4.6.4.1 Significance Criteria

The following section describes significance criteria for geology, soils, and mineral resource impacts derived from the CEQA Checklist. Geologic impacts are typically considered less than significant if, through engineering, geotechnical investigation, and construction techniques, the risk of damage to structures can be greatly minimized, although not eliminated completely.

Would the Project:

VI.a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault as on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and landslides? With implementation of APM GM-1 and APM GM-4, this potential impact is considered less than significant.

Potential Impact, GM-3 Slope Instability, discusses the potential for landslides. With implementation of APM GM-1 and APM GM-4, this potential impact is considered less than significant, as discussed in Section 4.6.4.3, Construction, Temporary Impacts. No other adverse effects in this criterion are expected, and mitigation is not needed.

VI.b) Result in substantial soil erosion or the loss of topsoil? With the implementation of APM GM-1 and APM GM-3, impacts from erosion will be less than significant.

Potential Impact GM-2, Erosion, discusses surface disturbance resulting from the reestablishment of access roads and, to a limited extent, the use of existing access roads that are not paved. With the implementation of APM GM-1 and APM GM-3, impacts from erosion will be less than significant, as discussed in Section 4.6.4.3, Construction, Temporary Impacts.

VI.c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? With the implementation of APM GM-1 and APM GM-2, impacts from soft or loose soils will be less than significant.

Potential Impact GM-1, Soft or Loose Soils, discusses how saturated, loose sands, and soft clays may pose difficulties in access for construction and in excavating for pole foundations. With the implementation of APM GM-1 and APM GM-2, impacts from soft or loose soils will be less than significant, as discussed in Section 4.6.4.3, Construction, Temporary Impacts.

VI.d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? No impact will occur; no mitigation is needed.

Expansive soil, which may cause differential and cyclical foundation movements, is not expected to have a significant effect on power poles which will extend 11 to 13.5 feet below grade; therefore, no impact will occur, and mitigation is not needed.

VI.e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? No impact will occur; no mitigation is needed.

The Project type does not include a waste disposal system; therefore, no impact will occur, and mitigation is not needed.

X.a) Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state? No impact will occur; no mitigation is needed.

The Project will not result in the loss of availability of a known mineral resource; therefore, no impact will occur, and mitigation is not needed.

X.b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land-use plan? No impact will occur; no mitigation is needed.

The Project will not result in the loss of availability of a locally important mineral recovery site; therefore, no impact will occur, and mitigation is not needed.

4.6.4.2 Applicant Proposed Measures

Specific potential impacts and each respective APM are discussed in the following sections. These APMs include measures that are already required by existing regulations and/or requirements or are standard practices that would minimize or prevent any potential impacts.

APM Geology and Mineral Resources (GM)-1: Appropriate design measures implementation. A landslide survey of the planned Project alignment will be conducted, which will include a reconnaissance to identify potential problems at planned pole locations. Appropriate design features will be developed where potential problems are found to exist. Appropriate design features may include excavation of potentially problematic soils during construction and replacement with engineered backfill, relocation of poles to avoid problematic soils or landslide areas, and pole depth specifications.

APM GM-2: Soft or loose soils during construction minimization. Where soft or loose soils are encountered during construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils encountered during construction. Such measures may include:

- Locating construction facilities and operations away from areas of soft and loose soil.
- Over-excavating soft or loose soils and replacing them with engineered backfill materials.
- Increasing the density and strength of soft or loose soils through mechanical vibration and/or compaction.
- Treating soft or loose soils in place with binding or cementing agents.

Construction activities in areas where soft or loose soils are encountered will be scheduled for the dry season to allow safe and reliable equipment access.

APM GM-3/WQ-3: Erosion Control and Sediment Transport Plan implementation. An Erosion Control and Sediment Transport Plan will be prepared in association with the Storm Water Pollution Prevention Plan. This plan will be prepared in accordance with the Water Board guidelines and other applicable Best Management Practices.

Implementation of the plan will help stabilize disturbed areas and waterways and will reduce erosion and sedimentation. The plan will designate Best Management Practices that will be followed during construction activities. Erosion-minimizing efforts may include measures such as:

- Avoiding excessive disturbance of steep slopes.
- Using drainage control structures (straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Strictly controlling vehicular traffic.
- Implementing a dust-control program during construction.
- Restricting access to sensitive areas.

- Using vehicle mats in wet areas.
- Revegetating disturbed areas where applicable following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities.

Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the proposed Project, which includes slopes, intermittent and seasonal streams, and the Santa Ynez River. BMPs documented in the Erosion Control and Sediment Transport Plan will also be included in the SWPPP.

APM GM-4: Slope instability during construction minimization. Temporary construction slopes and existing natural or constructed slopes impacted by construction operations will be evaluated for stability. In developing grading plans and construction procedures for access roads and power poles, the stability of both temporary and permanent cut, fill, and otherwise impacted slopes will be analyzed. Construction slopes and grading plans will be designed to limit the potential for slope instability and minimize the potential for erosion and flooding during construction. During construction, slopes affected by construction operations will be monitored and maintained in a stable condition. Construction activities likely to result in slope instability will be suspended, as necessary, during and immediately following periods of heavy precipitation when unstable slopes are more susceptible to failure.

4.6.4.3 Construction

Potential Impact GM-1: Soft or Loose Soils. With the implementation of APM GM-1 and APM GM-2, less than significant. Saturated, loose sands and soft clays may pose difficulties in access for construction and in excavating for pole foundations. Where potential problems exist, appropriate measures will be implemented to avoid, accommodate, replace, or improve soft or loose soils encountered during construction. With the implementation of APM GM-1 and APM GM-2, impacts from soft or loose soils will be less than significant.

Potential Impact GM-2: Erosion. With the implementation of APM GM-1 and APM GM-3, less than significant. Surface disturbance will result from the reestablishment of access roads and, to a limited extent, the use of existing access roads that are not paved. The amount of surface disturbance is related to slope steepness, which tends to dictate the amount of earth required to be moved to provide safe access road grades. In addition, the slope steepness greatly influences how rainfall runoff may cause soil erosion and contribute to sediment loading. With the implementation of APM GM-1 and APM GM-3, impacts from erosion will be less than significant.

Potential Impact GM-3: Slope Instability and Unstable Soil Conditions. With the implementation of APM GM-1 and APM GM-4, less than significant. Destabilization of natural or constructed slopes could occur as a result of construction activities. Grading operations associated with providing access to proposed pole locations could alter existing slope profiles making them unstable as a result of overexcavation of slope material, steepening of the slope, or increased loading. With the implementation of APM GM-1 and APM GM-4, impacts to slope stability will be less than significant.

4.6.4.4 Operation and Maintenance

There are no impacts associated with the operation and maintenance of the proposed Project. The site conditions and potential hazards, relative to geology, soils, and mineral resources, will not change as a result of the implementation of the Project; therefore, there are no impacts. However, incorporation of standard engineering practices as part of the Project will reduce the potential for structures to be exposed to geologic hazards.

4.6.5 Works Cited

2007 Working Group on California Earthquake Probabilities. 2008. The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2): U.S. Geological Survey Open-File Report 2007-1437 and California Geological Survey Special Report 203. Available online at: http://pubs.usgs.gov/of/2007/1437/.

Bryant, W.A. and E.W. Hart. 2007. Fault-rupture hazard zones in California, Alquist-Priolo Earthquake Fault Zoning Act with index to Earthquake Fault Zones Maps: Department of Conservation, California Geological Survey, Special Publication 42, Interim Revision 2007, 42 p.

California Department of Water Resources. 2009. Water data library. Available online at: http://www.wdl.water.ca.gov. Accessed March 2009.:

California Geological Survey (CGS). 2008. Seismic shaking hazards in California, based on the USGS/CGS probabilistic seismic hazards assessment, Model 2002 (revised April 2003). Available online at: http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html. Last edited on June 12, 2008. Accessed March 2009.

Clark, D.G. 1990. Late Quaternary tectonic deformation in the Casmalia range, coastal south-central California in Lettis, W.R., Hanson, K.L., Kelson, K.I., and Wesling, J.R., eds., Neotectonics of south-central coastal California: Friends of the Pleistocene, Pacific Cell 1990 Fall Field Trip Guidebook, p. 349-383.

Dibblee, T.W. 1982. Regional geology of the Transverse Ranges Province of southern California in Fife, D.L, and Minch, J.A., eds., Geology and mineral wealth of the California Transverse Ranges: South Coast Geological Society, Inc., Annual Symposium and Guidebook Number 10, p. 7-26.

__________. 1988. Geologic map of the Lompoc and Surf quadrangles, Santa Barbara County, California: Dibblee Geological Foundation, Map #DF-20, 1:24,000.

__________. 1993a. Geologic map of the Los Alamos quadrangle, Santa Barbara County, California: Dibblee Geological Foundation, Map #DF-46, 1:24,000.

__________. 1993b. Geologic map of the Zaca Creek quadrangle, Santa Barbara County, California: Dibblee Geological Foundation, Map #DF-45, 1:24,000.

Guptill, P.D., E.G. Heath, and G.E. Brogan. 1981. Surface fault traces and historical earthquake effects near Los Alamos Valley, Santa Barbara County, CA: U.S. Geological Survey Open-File Report 81-271, 56 p.

Mulchin, L. 1996. California seismic hazard map 1996, based on maximum credible earthquake (MCE), revised March 15, 2006. California Department of Transportation (Caltrans), Office of Earthquake Engineering.

Namson, J. and T.L. Davis. 1990. Late Cenozoic fold and thrust belt of the southern Coast Ranges and Santa Maria Basin, California: The American Association of Petroleum Geologists Bulletin, V. 74, No. 4 (April 1990), p. 467-492.

Santa Barbara County. 1979. Seismic Safety and Safety Element, *County of Santa Barbara Comprehensive Plan*, with amendments through 1991.

Shipman, G.E., C.J. Hilliker, L.C. Leifer, and R.C. Carman. 1972. Soil survey of Northern Santa Barbara area, California. U.S. Department of Agriculture, Soil Conservation Service in cooperation with University of California Agricultural Experiment Station, 189 p.

Southern California Earthquake Center (SCEC). 2009. Historical earthquakes in southern California. Available online at: http://www.data.scec.org/clickmap.html. Accessed March 2009.

United States Department of Agriculture (USDA). 2009. Soil survey data and maps. Available online at: http://websoilsurvey. nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed March 2009.

United States Geological Survey (USGS). 1959a. 7.5 minute series topographic map of the Los Alamos quadrangle, Santa Barbara County, California: USGS, 1:24,000.

__________. 1959b. 7.5 minute series topographic map of the Zaca Creek quadrangle, Santa Barbara County, California: USGS, 1:24,000.

__________. 1982. 7.5 minute series topographic map of the Lompoc quadrangle, Santa Barbara County, California: USGS, 1:24,000.

___________. 2008. 2008 United States national seismic hazard maps: U.S. Geological Survey. Available online at: http://earthquake.usgs.gov/research/hazmaps/products_data/2008/. Accessed March 2009.

___________. 2009. Earthquake hazards program, database search, Class A and B faults. Available online at: http://gldims.cr.usgs.gov/webapps/cfusion/Sites/qfault. Accessed March 2009.

4.7 Hazards and Hazardous Materials

4.7.1 Introduction

This section discusses potential hazards to public health and safety associated with construction and operation of the Project, including potential fire hazards, hazardous materials impacts, and corona and induced current effects and concludes that any impacts will be less than significant. The following CEQA Checklist summarizes the significance of the potential hazards and hazardous material impacts.

VII. HAZARDS AND HAZARDOUS MATERIALS -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	❐	❐	❐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❐	❐	☒	❐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	❐	❐	❐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	❐	❐	❐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	❐	❐	❐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	❐	❐	❐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❐	❐	❐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❐	❐	☒	❐

There are no known hazardous waste sites within the power line corridor, there are no public or private airports within 2 miles of the Project area, and the Project will not interfere or impair implementation of an adopted emergency response or evacuation plan. Fire hazards and potential impacts from hazardous materials used during construction will be less than significant with implementation of the APMs described in Section 4.7.4.

4.7.2 Methodology

Information was obtained from the Santa Barbara County Fire Department Hazardous Materials Unit and from the California Department of Forestry and Fire Protection's CALFIRE Web site. Information was also obtained from the State Water Resources Control Board (SWRCB) (Geotracker) and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) (Envirostor) databases (SWRCB, 2009; DTSC, 2009).

4.7.3 Existing Conditions

The proposed Project involves reconductoring a portion of an existing 14.6-mile-long 115 kV power line between the existing Cabrillo Substation and Santa Ynez Switching Station. Reconductoring of the power line will require the replacement of 128 wood poles with light-duty steel poles. The existing treated wood poles, once removed from the site, are considered hazardous material and will be disposed of at a licensed Class 1 or a composite-lined portion of a solid waste landfill. The new poles and power line will be located within PG&E's existing right-of-way. The power line route is not known to contain hazardous materials or other related risks to human health and safety. Review of the Geotracker and Envirostor databases indicate there are no hazardous waste sites within or near the power line corridor. The power line traverses areas with moderate to high fire hazard (California Department of Forestry and Fire Protection, 2007).

4.7.3.1 Regulatory Background

Federal

There are no federal regulations that limit high-frequency emissions from electric power lines. Federal Communication Commission Regulations Part 15, Section 15.25 requires that operation does not interfere with communications system.

State

The DTSC regulates hazardous waste, oversees the cleanup of existing contamination, and examines ways to reduce the hazardous waste produced in California. The DTSC is authorized by the Federal government to regulate hazardous waste in California under the Federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code.

The California Regional Water Quality Control Board, Central Coast Region (Water Board) is responsible for protecting the beneficial uses of water resources in the Project vicinity. The Water Board's Water Quality Control Plan (Basin Plan) sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. The Basin Plan establishes both numerical and narrative objectives and standards for water quality specific to the Central Coast aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan. Hydrology and water quality is discussed in Section 4.8, Hydrology and Water Quality.

The Santa Barbara County Fire Department Hazardous Materials Program is the Certified Unified Program Agency for Santa Barbara County. It regulates the following activities in the Project vicinity:

- Hazardous Materials Release Response Plans and Inventories
- California Accident Prevention Program
- California Uniform Fire Code: Hazardous Materials Management Plans and Hazardous Materials Inventories
- Hazardous Waste Programs: Generator programs and Onsite Hazardous Waste Treatment Activities
- Underground Tank Program
- Aboveground Petroleum Storage Act Requirements For Spill Prevention, Control, and Countermeasure Plans

4.7.4 Potential Impacts and Mitigation

4.7.4.1 Significance Criteria

Standards of significance were derived from the CEQA Checklist.

Would the Project:

VII.a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? No impact will occur; no mitigation is needed.

Project activities will not create a significant hazard to the public or the environment through routine activities; therefore, no impact will result and mitigation is not needed.

VII.b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? With implementation of APM HM-1 and APM HM-2, the potential impact will be less than significant.

Use of equipment during construction includes the potential for an accidental release of fluids from the equipment. This less than significant potential impact is discussed under Potential Impact HM-1, Potential for Spills and Emissions during Construction, in conjunction with implementation of APM HM-1 and APM HM-2.

VII.c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? No impact will occur; no mitigation is needed.

Project activities will not emit hazardous emission or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school; therefore, no impact will result and mitigation is not needed.

VII.d) Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment? No impact will occur; no mitigation is needed.

The Project is not known to be located on a hazardous material site; therefore, there is no impact, and mitigation is not needed.

VII.e) Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public or private airport and would result in a safety hazard for people residing or working in the project area? No impact will occur; no mitigation is needed.

The Project is not located within an airport land use plan or within 2 miles of an airport; therefore, there is no impact, and mitigation is not needed.

VII.f) Be within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? No impact will occur; no mitigation is needed.

The Project is not located in the vicinity of a private airstrip; therefore, there is no impact, and mitigation is not needed.

VII.g) Impair implementation of or physically interfere with an adopted emergency response or evacuation plan? No impact will occur; no mitigation is needed.

The Project will not impair implementation of or physically interfere with an adopted emergency response or evacuation plan; therefore, there is no impact, and mitigation is not needed.

VII.h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? With implementation of APM HM-2 and APM HM-3, the potential impact will be less than significant.

Potential Impact HM-2, Fire Hazard, is discussed in Section 4.7.3, Construction, Temporary Impacts. The potential impact will be less than significant with implementation of APM HM-2 and APM HM-3.

4.7.4.2 Applicant Proposed Measures

Specific potential impacts and each respective APM are discussed in the following sections. These APMs include environmental measures that are already required by existing regulations and/or requirements or are standard practices that will minimize any potential impacts.

APM Hazards and Hazardous Materials (HM)-1: Hazardous Substance Control and Emergency Response Plan development and implementation. PG&E has and will implement its systemwide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the Project Stormwater Pollution Prevention Plan (SWPPP) (see also APM WQ-3 and 4).

Emergency-spill supplies and equipment will be available to respond in a timely manner, if an incident should occur. Response materials such as oil-absorbent material, tarps, and storage drums will be used as needed to contain and control any minor releases.

A search of government databases indicates that there are no hazardous waste sites located within the Project area. If hazardous materials are encountered in excavated soils or groundwater as noted through sheen, odor, or other non-typical appearance, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. If excavation of hazardous materials is required, they will be handled, transported, and disposed of in accordance with federal, state, and local regulations.

Removed wood poles will be collected in project-specific containers at a PG&E Service Center designated as a PG&E consolidation site. Poles will be scheduled for transportation to the appropriate licensed Class 1 or a composite-lined portion of a solid waste landfill as containers are filled. Chemical Waste Management (CWM) Kettlemen Hills is typically used. There is no disposal capacity issue associated with the treated wood poles generated by this Project that will be received at CWM.

APM HM-2/WQ-2: Environmental Training and Monitoring Program (ETMP) development and implementation. An environmental training program will be established to communicate to all field personnel any environmental concerns and appropriate work practices, including spill prevention and response measures and Best Management Practices (BMPs). The training program will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific plans, including but not limited to the Project's SWPPP, Erosion Control and Sediment Transport Plan, Health and Safety Plan, and Hazardous Substances Control and Emergency Response Plan.

A monitoring program will also be implemented to ensure that the plans are followed throughout the construction period. BMPs, as identified in the Project SWPPP and Erosion Control and Sediment Transport Plan, will also be implemented during the Project to minimize the risk of an accidental release and to provide the necessary information for emergency response.

APM HM-3: Project-specific Fire Prevention and Response Plan development and implementation. PG&E will prepare a Fire Prevention and Response Plan that will include procedures to reduce the potential for igniting combustible materials. The plan will cover electrical hazards, flammable materials, smoking, and vehicle and equipment access during construction and maintenance procedures during subsequent operation. Project personnel will be directed to park away from dry vegetation; to equip vehicles with fire extinguishers; not to smoke; and to carry water, shovels, and fire extinguishers in times of high fire hazard. The plan will also cover procedures to reduce the potential fire hazard from operation of the power line.

4.7.4.3 Construction

Potential Impact HM-1: Potential for Spills and Emissions during Construction. Project construction will require the use of motorized heavy equipment, including trucks. Surface water and/or groundwater quality could be impacted by an accidental release of fluids from a vehicle or motorized piece of equipment.

With implementation of the Project's SWPPP, PG&E's Hazardous Substance Control and Emergency Response program described in APM HM-1, and ETMP described in APM HM-2, the potential impact is less than significant.

Potential Impact HM-2: Fire Hazard. Project activities involve less than significant fire hazard impact. In accordance with the most recent edition of the Uniform Fire Code Section 1109.5, and as part of standard construction practice, PG&E current policy of no smoking on construction sites will be enforced with construction and maintenance workforce. These procedures will be incorporated into the Fire Prevention and Response Plan described in APM HM-3.

With implementation of APM HM-3 and the ETMP described in APM HM-2, Potential Impact HM-2 is less than significant.

4.7.4.4 Operation and Maintenance

Other than substances associated with motor vehicles that will be occasionally used during routine maintenance, there are no hazardous materials associated with operation of the power line. Motor vehicles contain substances such as gasoline, diesel, antifreeze, and lubricants that, if released to the environment, could be hazardous. This hazard already exists and is being properly managed with operation of the existing power line, so there is no change and therefore no impact.

Power lines may pose a fire hazard when a conducting object, such as a tree limb, comes in proximity to a line. Current practice involves clearing potential proximate objects, such as trees, during construction and maintaining clearance during the life of the power line to minimize the fire hazard potential.

Conductors can be a fire hazard if they fall to the ground and create an electrical arc that ignites combustible material. During mechanical and structural design, selection of materials, and construction of power lines, PG&E takes into account normal and unusual structural loads such as ice and wind that can cause the conductors to break. PG&E installs high-speed relay equipment that senses a broken line condition and actuates circuit breakers to de-energize the line in about 0.10 of a second. This procedure has proven to be a reliable safety measure and reduces the risk of fire to a less than significant level. These fire hazards already exist and are being properly managed with operation of the existing power line. As result, there will be no impacts from operation of the power line.

4.7.5 Works Cited

California Department of Forestry and Fire Protection. 2007. Fire Hazard Severity Zones in SRA: Fire and Resource Assessment Program, Map ID FHSZS_MAP, adopted November 7, 2007. Available online at: http://frap.cdf.ca.gov/webdata/maps/santa_barbara/fhszs_map.42.pdf. Accessed on: March 5, 2009.

California Department of Toxic Substances Control (DTSC). 2009. Envirostor. Available online at: http://www.envirostor.dtsc. ca.gov/public. Accessed in: March 5, 2009.

State Water Resources Control Board (SWRCB). 2009. Geotracker. Available online at: https://geotracker.waterboards.ca.gov. Accessed on: March 2009.

4.8 Hydrology and Water Quality

4.8.1 Introduction

This section discusses the existing surface water and groundwater hydrology, use, and quality, as well as the potential for erosion and flooding in the Project area. It also discusses the potential impacts from development and operation of the Project on surface water and groundwater quality. The following CEQA Checklist summarizes the significance of the potential impacts to water quality.

VIII. HYDROLOGY AND WATER QUALITY -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Potential temporary impacts during construction include erosion, increased runoff and sedimentation, and release of hazardous materials from construction equipment and vehicles. These temporary impacts will be minimized to a less than significant level with the implementation of the APMs. Potential permanent operation impacts include replacement of existing poles in a floodplain, which is a less than significant impact. There are no impacts associated with maintenance of the power line.

4.8.2 Methodology

Information on surface water and groundwater in the Project area was obtained from published studies prepared by state, county, and local water agencies. Potential impacts to surface water and groundwater were evaluated by considering the initial construction activities and the long-term operation of the power line. PG&E will comply with all applicable federal, state, and local regulatory requirements that protect surface water and groundwater.

Areas of existing soil and water quality impacts were identified by searching federal and state regulatory agency databases that track sites with known, suspected, or potential hazardous substance contamination (e.g., underground storage tanks, landfills, etc.). The results of the database search are provided in Section 4.7, Hazards and Hazardous Materials.

4.8.3 Existing Conditions

4.8.3.1 Regulatory Background

The CPUC has primary jurisdiction over the Project by virtue of its approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over this type of utility project, such projects are exempt from local land use and zoning regulations and permitting. However, PG&E will obtain local nondiscretionary permits, including any applicable state and federal permits.

The regulatory framework for water is complex. Regulations governing water in Santa Barbara County and California, in general, cannot be found in any one source. There are a number of state, local, and federal laws that govern and guide water management in the county. The following sections provide a brief overview of pertinent regulations applicable to the Project.

Federal and State

Section 404 Permits. Waters of the United States (including wetlands) are subject to United States Army Corps of Engineers (USACE) jurisdiction under Section 404 of the federal Clean Water Act (CWA). Section 404 regulates the filling and dredging of U.S. waters. The limits of nontidal waters extend to the Ordinary High Water line, defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics such as a natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, presence of litter or debris, or other appropriate means. In general, ditches excavated on dry land that do not convey flows from historical streams are considered non jurisdictional as determined by USACE on a case-by-case basis. A Section 404 permit would be required for Project construction activities involving excavation of, or placement of fill material into, waters of the U.S. A Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions.

Streambed Alteration Agreements. Section 1601 of the California Department Fish and Game (CDFG) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFG in which there is, at any time, an existing fish or wildlife resource or benefit for the resource. General project plans must be submitted to CDFG that are sufficient to indicate the nature of a project for construction if the project would:

- Divert, obstruct, or change a streambed.
- Use material from the streambeds.
- Result in the disposal or deposition of debris, waste, or other material containing crumbed, flaked, or ground pavement where it can flow into a stream.

The CDFG code requires completion of formal notification and subsequent agreements, including mitigation measures, prior to initiating such construction activities.

Stormwater Pollution Prevention Plan. The Central Coast California Regional Water Quality Control Board, Region III (Water Board) implements water quality regulations under Section 402 of the federal CWA and the State Porter-Cologne Act. The regulations require compliance with the National Pollutant Discharge Elimination System (NPDES) program. Construction activities for this Project must comply with the California Stormwater NPDES General Construction Permit for discharges of stormwater runoff associated with construction activity. The Project applicant must submit a Notice of Intent to the State Water Resources Control Board (SWRCB) to be covered by the General Permit prior to initiating construction. The General Permit requires the implementation of a Storm Water Pollution Prevention Plan (SWPPP), which must be prepared before construction begins. The SWPPP includes:

- Specifications for Best Management Practices (BMPs) that will be implemented during Project construction to minimize the potential for accidental releases and to minimize runoff from the construction areas, including storage and maintenance areas and building material laydown areas.
- A description of a plan for communicating appropriate work practices to field workers.
- A plan for monitoring, inspecting, and reporting any release of hazardous materials.

During construction, the Water Board or local agency will oversee compliance for the SWRCB.

Local

Santa Barbara County Code. Chapter 14 of Santa Barbara County Code (Ordinance No. 4477) requires that a nondiscretionary grading permit be obtained for projects that disturb 50 cubic yards or more of material. An Erosion and Sediment Control Plan (ESCP) must be submitted and approved as part of the permit conditions. The required contents of an ESCP are contained in Section 14-29 of the County Code. A SWPPP can be submitted to the County in lieu of an ESCP for purposes of complying with Chapter 14. The ESCP must specify which erosion control measures will be in place during the rainy season (November

1 through April 15) and which measures shall be in place year-round. At a minimum, during the rainy season, no grading shall occur unless approved erosion and sediment control measures are implemented. Erosion and sediment control measures shall be in place prior to any grading on hillsides, sloping, or mountainous terrain. Measures for nonstormwater construction site discharge shall be implemented year-round.

4.8.3.2 Environmental Setting

Regional

The Project area is located within the Santa Ynez River watershed, which covers an area of approximately 900 square miles (Gibbs, 2006). The groundwater basins of the Santa Ynez River watershed lie between the San Rafael Mountains to the northeast, the Purisima Hills to the north, the Santa Ynez Mountains to the south, and the Pacific Ocean to the west. The east-west-oriented folds and faults of the region control the shape and location of these basins. The geologic formations and processes within the basins have been influenced by historical flow of the Santa Ynez River, creating terraces and uplands that contain the primary aquifers in the region (Gibbs, 2006).

The primary waterway draining the Santa Ynez River watershed is the Santa Ynez River, which originates in the San Rafael Mountains and flows westerly approximately 70 miles to the Pacific Ocean (Rodriguez and Lang, 2000). A small portion of the Santa Ynez River watershed lies in Ventura County. The watershed above Lake Cachuma is primarily open space under the jurisdiction of the Los Padres National Forest and the Lake Cachuma County Park. Downstream of Bradbury Dam, lands are mostly privately owned and fall under the jurisdiction of the County (Rodriguez and Lang, 2000). Existing land uses in the lower watershed include irrigated and nonirrigated agriculture, residential and urban areas, a federal prison, Vandenberg Air Force Base, cattle grazing, undeveloped open space, and mineral extraction (quarries, surface mines, and oil fields).

The Santa Ynez River watershed provides habitat to a variety of fish and wildlife species. Ten fish species are native to the river basin—four in freshwater and six in estuarine habitats. The steelhead trout and tidewater goby are listed as federally endangered (Rodriguez and Lang, 2000). There are also 15 species, most of which are game species or baitfish that were originally introduced to Lake Cachuma but have since spread to the downstream part of the basin. Other important species include the California red-legged frog, least Bell's vireo, the southwestern willow flycatcher, and the southwestern arroyo toad. Specific information regarding sensitive ecological habit in the Project area is discussed in Section 4.4, Biological Resources.

Precipitation

Santa Barbara County's climate is typically warm and dry in the summer and cool and wet in winter, similar to a Mediterranean-type climate. Most of the county's rivers, creeks, and streams remain dry during the summer months. The proximity of the Pacific Ocean tends to moderate climate and temperatures near the coast. The steep mountain ranges paralleling the coast result in increased precipitation with increased topographic elevation as storms are forced upwards against the mountains (County of Santa Barbara Public Works [CSBPW], 2009). Due to the variable rainfall and topographic relief, the region has been subject to numerous periods of flooding (CSBPW, 2009).

Precipitation in Santa Barbara County varies from season to season and with each location. The rainy season typically occurs between the months of October and May with the highest amount of precipitation typically occurring during the months of January, February, and March (CSBPW, 2009). Within the Santa Ynez River Valley Basin, precipitation ranges from 15 to 21 inches, with an average of 17 inches (California Department of Water Resources [CDWR], 2003). Rainfall is the primary source of recharge to the basin. Climate studies have shown that drought periods occur regularly and can last as long as a decade or more (CSBPW, 2009).

Well response to precipitation depends on many factors, including the percolation time required for recharge to reach the water table. Deep aquifers respond slowly, often having a lag time of 2 or more years. Shallow aquifers, such as those near creeks and rivers and those located in relatively shallow basins with surface material of high porosity, tend to respond more quickly to variations in precipitation and stream flow. These areas show a strong correlation between well measurements for a particular year and that season's precipitation (Gibbs, 2006).

The drought of 1987 to 1991 led to significant declines in water levels. After 1991, seven out of nine years produced above-average rainfall, thereby resulting in the highest groundwater levels (from 1999 to 2002) observed since the mid-1940s and, in some areas, since the 1920s (Gibbs, 2006). The historic winter of 1998 caused shallow wells to rise sharply and deeper wells to rise for up to 3 to 4 years afterwards. Rainfall was below to about average until 2005 when higher-than-normal rainfall produced substantial runoff to reservoirs and recharge to groundwater. Data for the current year indicate rainfall in the Lompoc-Buellton area is between 75 and 90 percent of normal, as of February 23, 2009 (CSBPW, 2009).

Surface Water Bodies

Creeks and Rivers. The Santa Ynez River watershed is drained by the Santa Ynez River. The Santa Ynez River, which originates in the San Rafael Mountains near the eastern border of Santa Barbara County, follows a westward course for about 70 miles to the Pacific Ocean (Rodriguez and Lang, 2000). The terrain on the south side of the river rises steeply to the crest of the Santa Ynez Mountains. West of Buellton, the river meanders through a narrow stretch to the Lompoc Narrows and flows through the Lompoc Plain before it empties into the Pacific Ocean. The river is characterized by both narrow channel sections and broad alluvial floodplains that are more than 2,000 feet wide near Lompoc (Rodriguez and Lang, 2000).

Stream flow in the Santa Ynez River watershed is derived primarily from surface runoff and shallow groundwater inflow following storm events, which vary greatly in frequency and intensity from year to year. The geology and topography of the region create rapid runoff conditions, as indicated by hydrographs showing sharp responses to precipitation (Gibbs, 2005).

Downstream of Bradbury Dam, there are several major tributaries that contribute significant flow to the lower Santa Ynez River. The most important tributaries are Santa Agueda, Alamo Pintado, Zaca, Alisal, Salsipuedes, and San Miguelito Creeks.

The Project power line crosses the Santa Ynez River immediately east of Cabrillo Substation. No poles are within the high-water mark; however, Poles 3 and 6-8 are located within the

100-year flood plain. Within the Project area, which is downstream of Bradbury Dam, there are several south-flowing, un-regulated tributaries that cross the power line, including Santa Rosa Creek, Cañada de los Platos Blancos, and Cañada de la Laguna.

Reservoirs. In Santa Barbara County, surface water flow is dependent on rainfall, as there is little base flow and snowmelt is insignificant (Rodriguez and Lang, 2000). The top 25 percent of the heaviest rainfall creates most of the volume of water flowing in the rivers. During most normal years, most of the tributary streams are dry during the summer and fall months. As a result, four reservoirs have been built in Santa Barbara County to capture the surface flow (Gibbs, 2006).

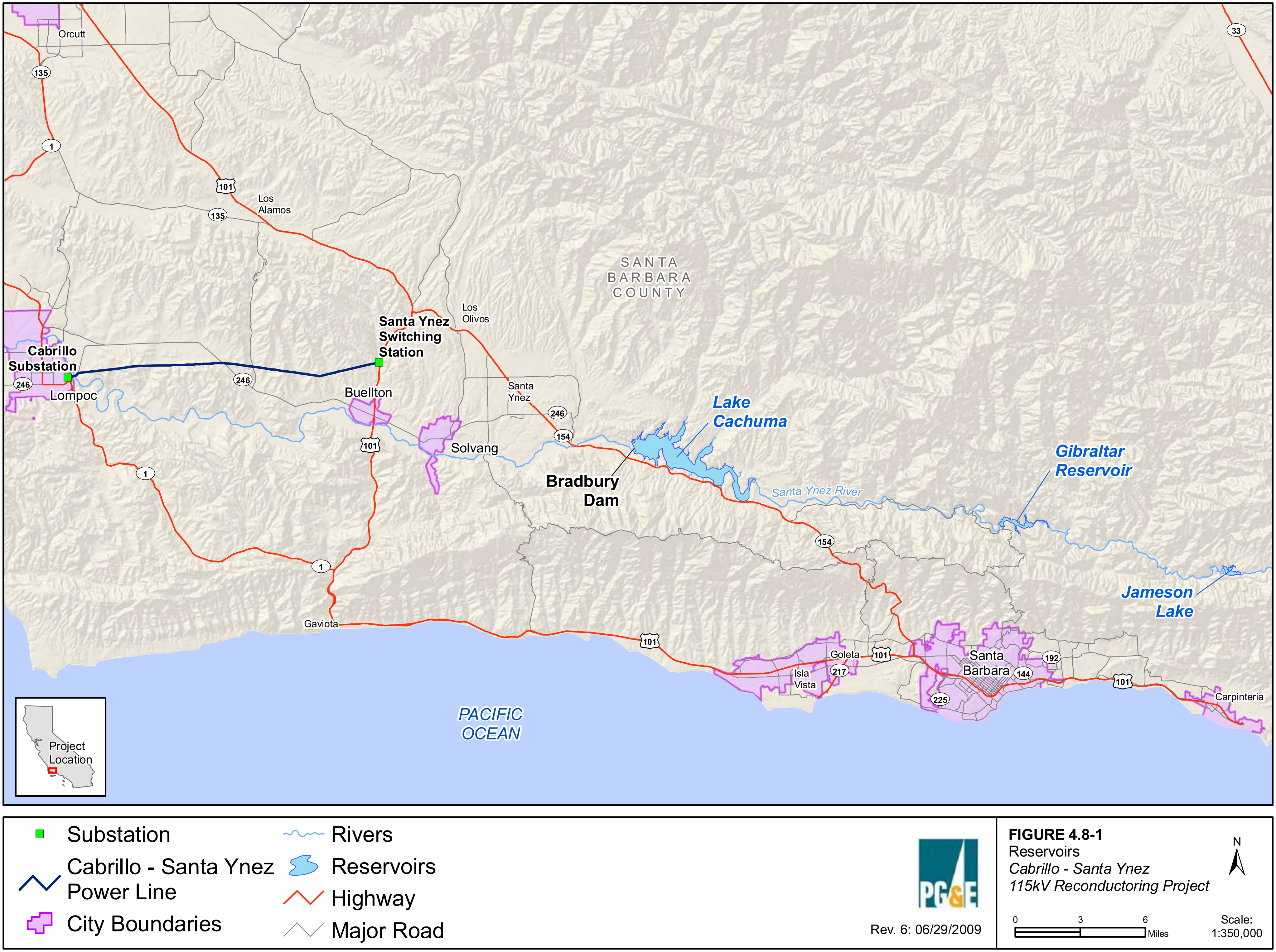
In the Santa Ynez River watershed, three storage reservoirs divert Santa Ynez River water to users primarily on the southern coast of Santa Barbara County. From east to west, as shown in Figure 4.8-1, Reservoirs, the reservoirs include Jameson Lake, Gibraltar Reservoir, and Lake Cachuma.

Jameson Lake. Jameson Lake, the smallest of the three reservoirs, was created by the construction of Juncal Dam, which was completed in 1930. It is located upstream approximately 40 miles east of the Project area in the upper reaches of the Santa Ynez River watershed. The reservoir covers an area of approximately 138 acres and has a capacity of about 5,291 acre-feet. Water from Jameson Lake is diverted to the Montecito area through the Doulton Tunnel.

Gibraltar Reservoir. The construction of Gibraltar Dam and Reservoir was completed in 1920 to provide water from the Santa Ynez River Basin to residents in the City of Santa Barbara. Gibraltar Reservoir is located upstream approximately 30 miles east of the Project area. Water is conveyed through the Mission Tunnel, which was completed in 1912. Mission Tunnel is about 3.7 miles long and was originally designed to intercept groundwater flow. Infiltration into Mission Tunnel varies with rainfall but averages approximately 1,100 acre-feet per year.

Gibraltar Reservoir's original capacity of 14,500 acre-feet was reduced to approximately 7,800 acre-feet by 1945 due to buildup of sedimentation. The dam was raised 23 feet in 1948 to restore its original capacity, but sedimentation continues to decrease storage capacity by about 150 acre-feet per year.

Lake Cachuma. In 1952, Bradbury Dam created Lake Cachuma, the largest of the three reservoirs within the Santa Ynez River watershed. Lake Cachuma is located upstream approximately 12 miles east of the Project area. The reservoir has a capacity of 190,409 acre-feet and provides water to the City of Santa Barbara, Montecito Water District, Goleta Water District, Carpinteria Valley Water District, and the Santa Ynez River Water Conservation District. The downstream water rights releases serve over 290,000 people in Santa Barbara County and over 38,000 acres of cropland in Santa Ynez Valley that supports a multimillion dollar agricultural industry (Rodriguez and Lang, 2000).



Rev. 6: 06/29/2009

FIGURE 4.8-1
Reservoirs
Cabrillo - Santa Ynez
115kV Reconductoring Project

Scale: 1:350,000

Ponds and Seasonal Wet Areas. Accumulation of runoff in natural depressions and hill-slope seepage during the rainy season form intermittent streams and seasonal ponds. There are several areas along the power line alignment that form seasonal wet areas. Section 4.4, Biological Resources, of this report identifies the seasonal wet areas and provides a detailed discussion of pertinent seasonal streams and ponds.

Flooding Potential and Dam Failure Inundation Area

Two major indicators of potential flooding are the presence of a floodplain as defined by the Federal Emergency Management Agency (FEMA), and a Flood Hazard Area, as defined in the *Environmental Resources Management Element of the Santa Barbara County Comprehensive Plan* (Santa Barbara County, 1979). A floodplain is defined by FEMA as the area of land adjacent to the watercourse that may be submerged by flood water during a 100-year storm. These areas, as shown in Figure 4.8-2, are defined on FEMA Flood Insurance Rate Maps. Figure 4.8-2 shows that the Cabrillo-Santa Ynez Power Line crosses three flood zone areas, as defined by FEMA. These are the Santa Ynez River (Zone A and Zone AE) near Cabrillo Substation, an unnamed south-flowing creek in the Santa Rita Valley (Zone A), and the south-flowing Santa Rosa Creek (Zone A).

Zone A is defined as an area "with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage" and is classified as high risk. No depths or base-flood elevations are shown within these zones because detailed analyses are not performed for such areas. Zone AE is the same as Zone A except that base flood elevations are derived from detailed analyses and are shown on the map at selected intervals. Many of the areas of potential flooding shown on the map were not delineated through detailed hydrologic and hydraulic analyses and therefore have approximate limits. The cross section lines in the Santa Ynez River indicate that detailed analyses were performed to estimate the flood-zone limits. Figure 4.8-2 shows a base flood elevation of 112 to 116 feet near the power line where it crosses the Santa Ynez River. There are four existing poles below the base flood elevation, as discussed earlier. Flood hazard areas are defined in the *Environmental Resources Management Element of the Santa Barbara County Comprehensive Plan* adjacent to watercourses where the potential for flooding may adversely affect urban development and are coincident with the 100-year flood plain areas as defined by FEMA.

In addition, the Santa Ynez River and adjacent areas are subject to dam inundation hazards. The only major dam upstream of the Project area is the Bradbury Dam at Lake Cachuma. The dam is located approximately 12 miles east of the Project area. In the unlikely event of a dam failure, flood waters will inundate the Santa Ynez River and adjacent lands, including a portion of the power line, as described earlier.

Groundwater

The Santa Ynez River Valley Groundwater Basin, as defined by CDWR (2003), provides storage for an estimated 2.7 million acre-feet of groundwater. The basin covers an area of approximately 204,000 acres (319 square miles) and is underlain by more than 1,500 feet of water-bearing materials in the western part of the basin to about 3,000 feet in the eastern part of the basin (CDWR, 2003).

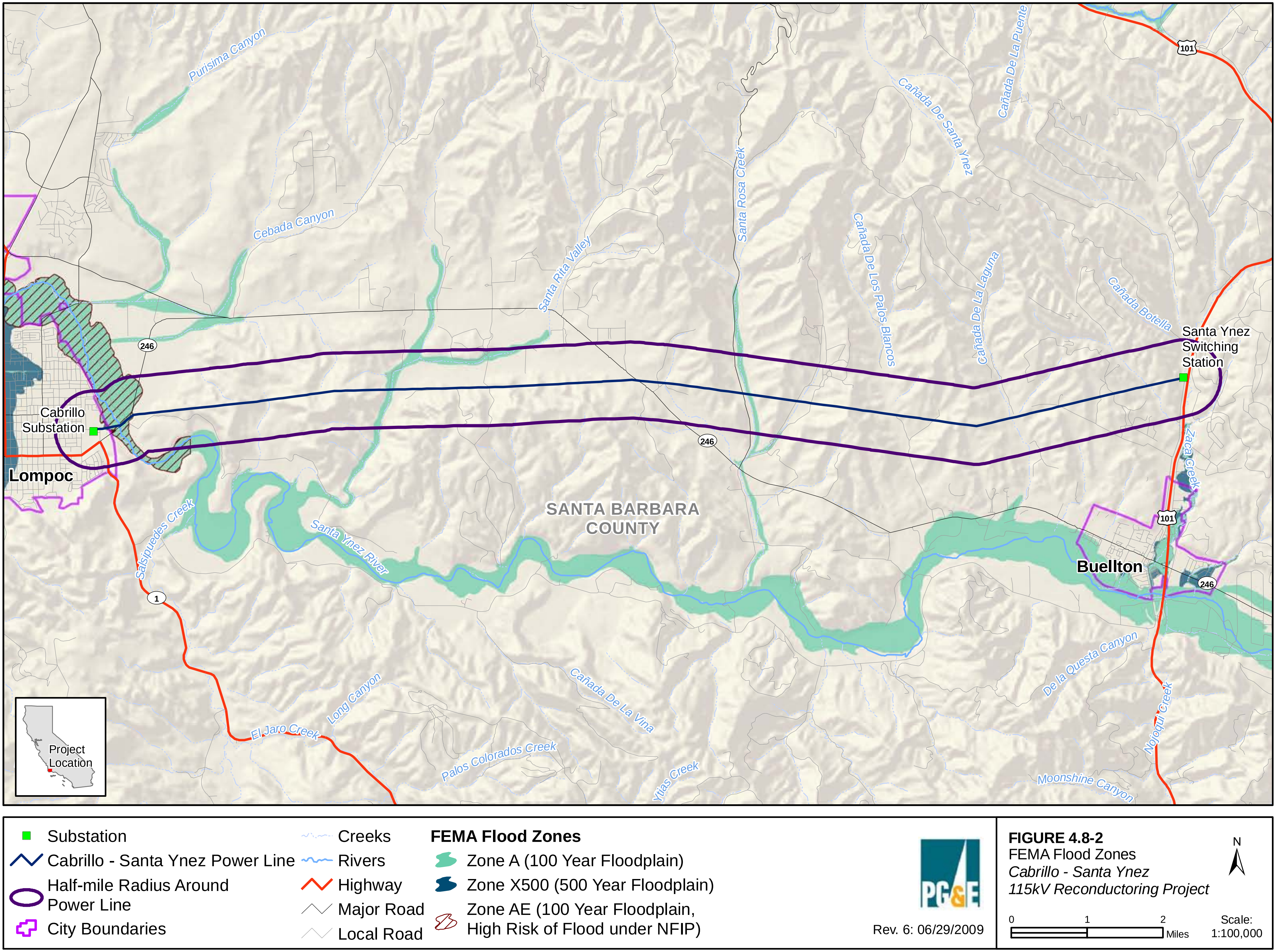


FIGURE 4.8-2
FEMA Flood Zones
Cabrillo - Santa Ynez
115kV Reconductoring Project

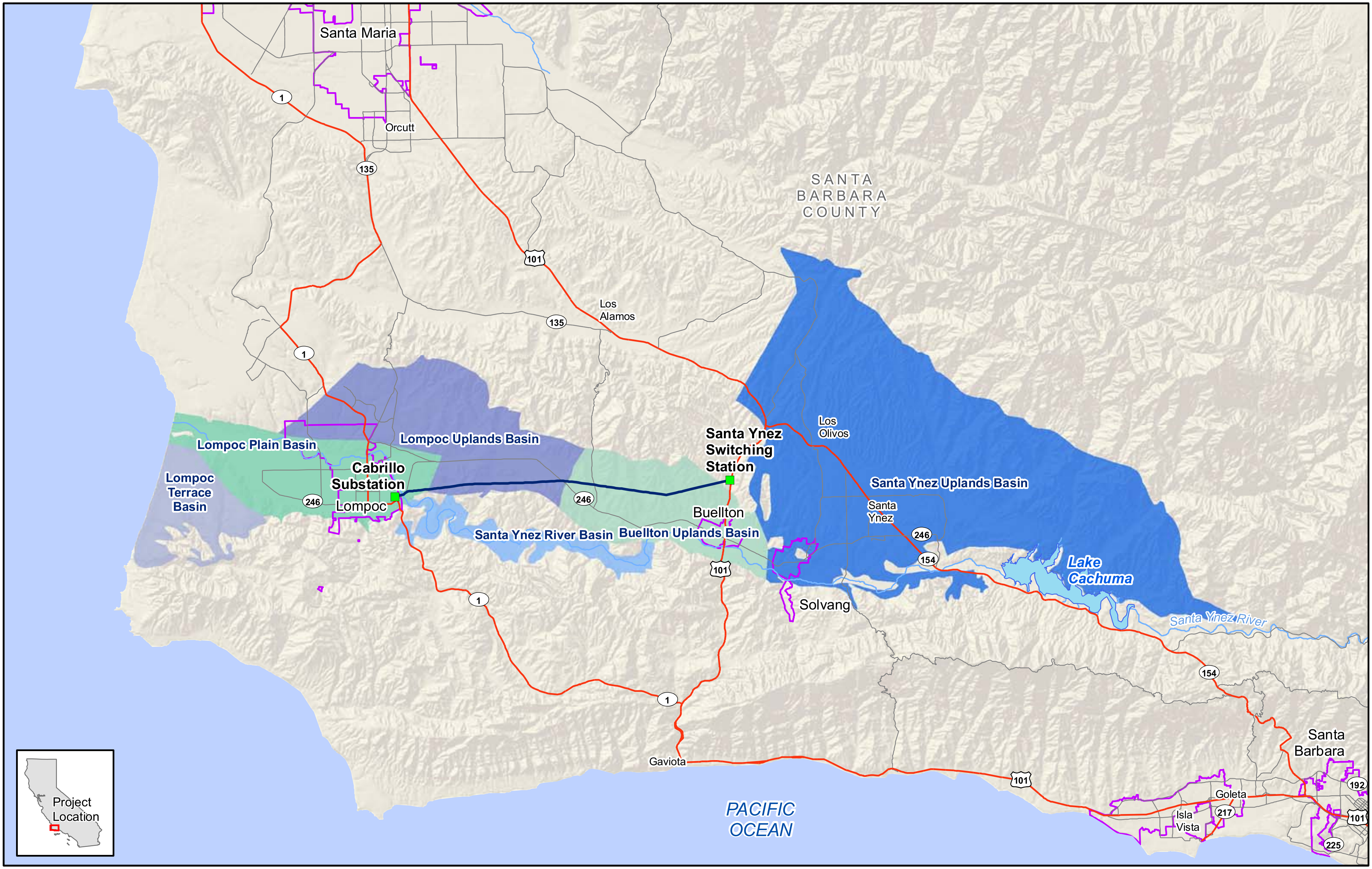
The Santa Barbara County Water Agency (SBCWA) divides the basin into three main basins, (as shown in Figure 4.8-3, Groundwater Basins): the Santa Ynez Uplands Basin, Buellton Uplands Basin, and the Lompoc Basin, which is divided into three subbasins, including the Lompoc Plain, Lompoc Terrace, and the Lompoc Uplands (Gibbs, 2006; Rodriguez and Lang, 2000). The Santa Ynez River Alluvial Basin, also referred to as the Santa Ynez River Riparian Basin in some SBCWA reports, includes the unconsolidated sand and gravel alluvial deposits of the Santa Ynez River from Bradbury Dam to the Lompoc Plain and is considered a separate basin or "other" groundwater resource within the Santa Ynez River watershed.

From west to east, the Project power line overlies the Lompoc Plains Basin, the Lompoc Uplands Basin, and the Buellton Uplands Basin. Depth to groundwater occurs at depths of 30 feet or more within the Lompoc Plains and in Buellton (California Geotracker database, but may be shallower near the Santa Ynez River and tributaries to the river.

Groundwater occurs in alluvial and terrace deposits, including the Orcutt Formation, and in the Paso Robles and Careaga Formations. The maximum thickness of the water-bearing sediments in the Project area ranges from 900 to more than 2,000 feet (City of Lompoc, 1997; Bright et al., 1992; Dibblee, 1993).

Lompoc Plain Basin. The Lompoc Plain groundwater basin surrounds the lower reaches of the Santa Ynez River and is bordered on the north by the Purisima Hills, on the east by the Santa Rita Hills, on the south by the Lompoc Hills, and on the west by the Pacific Ocean. The unconsolidated materials within the valley comprise the Lompoc groundwater basin, a hydrologic subunit of the greater Santa Ynez River Valley Basin (CDWR, 1964). Collectively, sandstone deposits attain a thickness of approximately 900 feet in the Lompoc Plain groundwater basin (City of Lompoc, 1997). Groundwater flow in the basin is generally toward the west.

Two separate aquifer systems, an upper and a lower, have been identified in the unconsolidated deposits that fill the basin (City of Lompoc, 1997). The upper aquifer system is subdivided into a shallow zone, middle zone, and main zone (City of Lompoc, 1997) and has a total thickness of approximately 200 feet. The shallow zone is about 75 feet thick and includes recent alluvial plain and river-channel deposits. Groundwater within the shallow zone occurs at depths of approximately 30 to 40 feet below the ground surface. The underlying middle zone is approximately 50 feet thick and comprises fine-grained deposits that are interbedded with sand and gravel of high permeability. The main zone consists of a 75-foot-thick section of highly permeable sand and gravel that is separated from the overlying middle zone by silt and clay deposits. According to the City of Lompoc, the main source of groundwater for the city is the main zone of the upper aquifer (City of Lompoc, 1997). The lower aquifer is composed of moderately permeable unconsolidated Pliocene-Pleistocene deposits that include the Orcutt Sand, Paso Robles Formation, and the Careaga.



Substation
Cabrillo - Santa Ynez Power Line
City Boundaries
Rivers
Reservoirs
Highway
Major Road

Groundwater Basins

Buellton Uplands Basin
Lompoc Plain Basin
Lompoc Terrace Basin
Lompoc Uplands Basin
Santa Ynez River Basin
Santa Ynez Uplands Basin

PG&E

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FIGURE 4.8-3
Groundwater Basins
Cabrillo - Santa Ynez
115kV Reconductoring Project

N

0 3 6 Miles

Scale: 1:350,000

Lompoc Uplands Basin. The Lompoc Uplands Groundwater Basin is bordered on the west by the Burton Mesa, on the north by the Purisima Hills, on the east by a topographic divide, which separates it from the Buellton Uplands Basin, and on the south by the Lompoc Plain and the Santa Rita Hills. The Lompoc Uplands is hydraulically connected to the Lompoc Plain and, historically, has contributed to recharge of the Lompoc Plain through underflow. Due to long-term declines in water levels, there is now very little underflow between the basins (Gibbs, 2006).

Topographically, the Lompoc Uplands rise in elevation north-northeasterly to the base of the Purisima Hills. Thin, recent alluvial sediments comprising the shallow aquifer zone in the Lompoc Plain is present only in the southward flowing narrow alluvial creeks and streams and in the Santa Rita Valley.

The power line traverses the lower part of the basin between the Santa Ynez River and SR 246. This section of the power line is underlain by terrace deposits (older alluvium), the Orcutt Sandstone, Paso Robles Formation, and Careaga Sandstone, which comprise the lower aquifer in the Lompoc Plain Basin. Collectively, these formations have a thickness of more than 2,000 feet along the axis of the Santa Rita syncline (Dibblee, 1993).

Water-level data in this area are sparse, but available information from the CDWR indicates that depth to water varies greatly. Depths to water in two wells located near the Project area range from 200 feet north of SR 246 to 370 feet south of SR 246. Depth to water in a third well located south of SR 246 indicates that groundwater can be as shallow as 20 feet in the shallow alluvium within Santa Rita Valley (CDWR, 2009).

Buellton Uplands Basin. The Buellton Uplands Groundwater Basin encompasses about 29 square miles north of the Santa Ynez River (Gibbs, 2006). Available storage in the Buellton Uplands Basin is estimated to be on the order of 154,000 acre-feet. The basin boundaries include the impermeable bedrock of the Purisima Hills to the north, the Santa Ynez River fault to the south, a limited connection to the Santa Ynez Upland Groundwater Basin to the east, and a topographic divide between the Buellton Uplands and Lompoc Uplands to the west (Gibbs, 2006). In the southeastern part of the basin (south of SR 246), the Santa Ynez River Alluvial Basin is part of and overlies the Buellton Uplands Basin. Based on the hydraulic gradient, groundwater discharge is predominantly into the Santa Ynez River Alluvial Basin (Gibbs, 2006) and, to a lesser extent, into the Lompoc Uplands Basin through Santa Rita Valley. Recharge to the basin is from deep percolation of rainwater, stream seepage, and underflow from adjacent basins (Gibbs, 2006).

Water Quality. Groundwater quality in the shallow zone of the Lompoc Plain is poorest near the coast and in heavily irrigated areas of the subbasin (Gibbs, 2006). Concentrations of total dissolved solids (TDS) were measured near the coast as high as 8,000 milligrams per liter (mg/L) in the 1980s. In the middle zone, TDS concentrations average over 2,000 mg/L below agricultural areas in the northern and eastern part of the plain. Areas of recharge adjacent to the Santa Ynez River contained TDS concentrations of less than 1,000 mg/L. The main zone contains TDS as high as 4,500 mg/L near the coast. Water quality in the Lompoc Upland Basin is of better quality, with TDS averaging less than 700 mg/L. For the Buellton Upland Basin, there are little water quality data available (Gibbs, 2006). Data from the late 1950s and early 1960s indicate that TDS ranges from 300 to 700 mg/L.

4.8.4 Potential Impacts and Mitigation

The following section describes significance criteria for hydrology and water quality impacts derived from the CEQA Checklist, potential Project-related construction and operational impacts, and APMs that minimize impacts to less than significant levels.

4.8.4.1 Significance Criteria

Significance criteria were derived from the CEQA Checklist. Criteria without anticipated impacts are discussed briefly in the following list. Criteria with anticipated less than significant impacts are discussed in Section 4.8.4.3.

Would the Project:

VIII.a) Violate any water quality standards or waste discharge requirements? With implementation of APM WQ-1, APM WQ-2, APM WQ-3, and APM WQ-4, the potential impacts are less than significant.

Potential Impact WQ-1: Potential Accelerated Soil Erosion, Downstream Sedimentation, and Reduced Surface Water Quality during Construction, discusses a less than significant impact with implementation of APM WQ-1, APM WQ-2, and APM WQ-3.

Potential Impact WQ-2: Water-Quality Degradation Caused by Accidental Release of Environmentally Deleterious Materials during Construction, discusses a less than significant impact with implementation of APM WQ-1, APM WQ-2, and APM WQ-4.

VIII.b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level? No impact will occur and no mitigation is needed.

The proposed Project will not deplete or interfere with groundwater supply or recharge; therefore, no impact will occur and no mitigation is needed.

VIII.c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or sedimentation on- or off-site? No impact will occur and no mitigation is needed.

The proposed Project will not result in substantial erosion or sedimentation on- or off-site, no impact will occur and no mitigation is needed.

VIII.d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? No impact will occur and no mitigation is needed.

The proposed Project is not anticipated to substantially alter the drainage resulting in flooding; therefore, no impact will occur and no mitigation is needed.

VIII.e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff? No impact will occur and no mitigation is needed.

The proposed Project will not contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provides substantial additional sources of polluted runoff, no impact will occur and no mitigation is needed.

VIII.f) Otherwise substantially degrade water quality? No impact will occur and no mitigation is needed.

The proposed Project will not substantially degrade water quality, no impact will occur and no mitigation is needed.

VIII.g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map? No impact will occur and no mitigation is needed.

The proposed Project will not construct housing; therefore, no impact will occur and no mitigation is needed.

VIII.h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows? No impact will occur and no mitigation is needed.

The proposed Project does not change the existing conditions; therefore, no impact will result, and no mitigation is needed.

VIII.i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? No impact will occur and no mitigation is needed.

The proposed Project will not be replacing poles at or in the vicinity of the Santa Ynez River. All other new poles will be located at approximately the same location (typically within approximately 5 feet), thus, the proposed Project does not change the existing conditions, no impact will occur and no mitigation is needed.

VIII.j) Cause inundation by seiche, tsunami, or mudflow? No impact will occur and no mitigation is needed.

The Project type is not expected to cause inundation by seiche, tsunami, or mudflow; therefore, no impact will occur and no mitigation is needed.

4.8.4.2 Applicant Proposed Measures

Specific potential impacts and each respective APM are discussed in the following sections. These APMs include measures that are already required by existing regulations and/or requirements or are standard practices that will minimize or prevent any potential impacts.

APM Water Quality (WQ)-1: SWPPP development and implementation. PG&E will comply with all applicable federal, state, and local regulatory requirements that protect surface water and groundwater. PG&E will prepare and implement a SWPPP that will include BMPs to minimize construction impacts on surface and groundwater quality and will include, at a minimum, measures such as:

- APM WQ-2, Worker Environmental Awareness specific to this Project.
- APM WQ-3, Erosion Control and Sediment Transport measure implementation.
- APM WQ-4, Hazardous Substance Control and Emergency Response measure specific to this Project.

The SWPPP will be prepared once the Project is approved.

APM WQ-2/HM-2: Environmental Training and Monitoring Program (ETMP) development and implementation. Worker environmental awareness will communicate environmental issues and appropriate work practices specific to this Project. This awareness will include spill prevention and response measures and proper BMP implementation. The SWPPP training will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of flow paths to nearest waterbodies) and will include a review of all site-specific water quality requirements, including applicable portions of , the Erosion Control and Sediment Transport Plan, Health and Safety Plan, and PG&E's Hazardous Substances Control and Emergency Response program.

A monitoring program will also be implemented to ensure that the plans are followed throughout the construction period. BMPs, as identified in the Project SWPPP and Erosion Control and Sediment Transport Plan, will also be implemented during the Project to minimize the risk of an accidental release and to provide the necessary information for emergency response.

APM WQ-3/GM-3: Erosion Control and Sediment Transport Plan preparation and implementation. An Erosion Control and Sediment Transport Plan will be prepared in association with the SWPPP. This plan will be prepared in accordance with Water Board guidelines and other applicable BMPs.

Implementation of the plan will help stabilize disturbed areas and waterways and will minimize erosion and sedimentation. The plan will designate BMPs that will be followed during construction activities. Erosion-minimizing efforts may include measures such as:

- Avoiding excessive disturbance of steep slopes.
- Using drainage control structures (straw wattles or silt fencing) to direct surface runoff away from disturbed areas.
- Defining ingress and egress.
- Implementing a dust control program during construction.
- Restricting access to sensitive areas.
- Using vehicle mats in wet areas.
- Revegetating disturbed areas where applicable following construction.

In areas where soils are to be temporarily stockpiled, soils will be placed in a controlled area and will be managed with similar erosion control techniques. Where construction activities occur near a surface waterbody or drainage channel and drainage from these areas flows towards a waterbody or wetland, stockpiles will be placed at least 100 feet from the waterbody or will be properly contained (such as berming or covering to minimize risk of sediment transport to the drainage). Mulching or other suitable stabilization measures will be used to protect exposed areas during and after construction activities.

Erosion-control measures will be installed, as necessary, before any clearing during the wet season and before the onset of winter rains. Temporary measures such as silt fences or wattles intended to minimize erosion from temporarily disturbed areas will remain in place until disturbed areas have stabilized.

The SWPPP will be designed specifically for the hydrologic setting of the proposed Project, which includes slopes, intermittent and seasonal streams, and the Santa Ynez River. BMPs documented in the Erosion Control and Sediment Transport Plan will also be included in the SWPPP.

APM WQ-4: Hazardous Substance Control and Emergency Response Plan implementation. PG&E has and will implement its system-wide program which includes established procedures for handling and managing hazardous substances and emergency response in the event of a hazardous substance spill. These procedures will add to the requirements in the Project Stormwater Pollution Prevention Plan (SWPPP).

A search of government databases indicates that there are no hazardous waste sites located within the Project area. If hazardous materials are encountered in excavated soils or groundwater, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment (see Section 4.7, Hazards and Hazardous Materials, for additional discussion). If excavation of hazardous materials is required, these materials will be handled, transported, and disposed of in accordance with federal, state, and local regulations.

4.8.4.3 Construction

Potential Impact WQ-1: Potential accelerated soil erosion, downstream sedimentation, and reduced surface water quality during construction. Impacts will be less than significant with implementation of APM WQ-1, APM WQ-2, and APM WQ-3. Accelerated soil erosion, subsequent downstream sedimentation, and reduced surface water quality could potentially occur during construction of the proposed Project power line. Replacement of the existing poles and reestablishment of certain access roads will require earth moving activities (e.g., excavation of new post holes and minor grading). Soil erosion rates could potentially be accelerated, and sedimentation in downstream waterways could occur because of soil disturbance and vegetation removal.

The existing power line corridor and access roads cross several ephemeral streams. Surface water quality could be diminished as a result of: (1) vehicular traffic on unpaved areas; (2) excavation and grading at the new pole locations; (3) soil disturbance from material laydown at pull sites/laydown areas; and (4) scraping, grading, and culvert installation in ephemeral streams for temporary access roads. If sediment-laden runoff enters nearby drainages, this runoff could potentially increase turbidity and channel siltation. The potential for erosion increases as slopes become steeper and less vegetated. Construction activities conducted when the ground is wet also create the potential for increased sediment runoff. With implementation of APM WQ-1, APM WQ-2, and APM WQ-3, potential impacts will be less than significant.

Potential Impact WQ-2: Water-quality degradation caused by accidental release of environmentally deleterious materials during construction. Impact will be less than significant with implementation of APM WQ-1, APM WQ-2, and APM WQ-4. Construction of the proposed Project will require the use of a variety of motorized heavy equipment, including trucks, cranes, dozers, air compressors, backhoes, and drill rigs. Surface water and groundwater quality may be affected during construction by an accidental release from a vehicle or motorized piece of equipment. Spills could wash into nearby drainages or infiltrate the soil. Surface or groundwater quality could potentially be degraded. With implementation of APM WQ-1, APM WQ-2, and APM WQ-4, Potential Impact WQ-2 the impacts will be less than significant.

Potential Impact WQ-3: Increased runoff from pole removal/installation and grading of access roads. Impact will be less than significant with implementation of APM WQ-1 and APM WQ-3. At each pole location, a hole will be drilled for installation of the new poles a typical distance of approximately 5 feet from the existing poles. The existing poles will be removed, and the holes will be backfilled with soil removed from the new pole locations. Scraping and grading of existing access roads will remove vegetation and disturb the soil surface, which could result in a reduction in the infiltration and absorption capacity of the affected area. With implementation of APM WQ-1 and APM WQ-3, Potential Impact WQ-3 will be less than significant.

4.8.4.4 Operation and Maintenance

Operations and maintenance activities are not expected to change from the current practices and no impacts are expected.

4.8.5 Works Cited

Bright, D.J., C.L. Stamos, P. Martin, and D.B. Nash. 1992. *Ground-water hydrology and quality in the Lompoc area, Santa Barbara County, California, 1987-88*. U.S. Geological Survey Water Resources Report 91-4172.

California Department of Water Resources (CDWR). 1964. *San Luis Obispo and Santa Barbara Counties Land and Water Use Survey, 1959.* CDWR Bulletin No. 103, 8 Plates, 3 Appendices, 62 p.

__________. 2003. *California's groundwater: CDWR, Bulletin 118, Individual Basin Descriptions, Santa Ynez River Valley Groundwater Basin, Central Coast Hydrologic Region*. Last update on February 27, 2004.

__________. 2009. CDWR Groundwater Level Data, Map Interface. Available online at: http://wdl.water.ca.gov/gw/

City of Lompoc. 1997. *General Plan, Undated: Section IV, Environmental Setting, Thresholds of Significance, Impact Analysis, Mitigation Measures & Residual Impacts, Water Resources Section B.7*. p. 356-386.

County of Santa Barbara Public Works (CSBPW). 2009. Hydrology Section: Climatology and Rainfall Information. Available online at: http://www.countyofsb.org/pwd/pwwater.aspx?id=3582. Accessed March 2009.

Dibblee, T.W. 1993. Geologic map of the Los Alamos quadrangle, Santa Barbara County, California: Dibblee Geological Foundation, Map #DF-46, 1:24,000.

Gibbs, D. 2006. *2005 Santa Barbara County Groundwater Report*. Santa Barbara County Public Works, Water Resources Department, Water Agency Division, report date March 28, 2006.

Rodriguez, L. and R. Lang. 2000. *Water Resources*. Santa Barbara County Public Works, Water Resources Department, Water Agency Division. 118 p.

Santa Barbara County. 1979. *Environmental Resources Management Element of the Santa Barbara County Comprehensive Plan.*

4.9 Noise

4.9.1 Introduction

This section describes the potential noise impacts that may result from the construction and operation of the Project. This section discusses methodology, existing conditions, potential impacts, and applicant proposed measures. Potential impacts during construction include temporary exposure to noise from construction equipment and vehicles. These temporary impacts will be minimized to a less than significant level with implementation of the APMs. There are no impacts anticipated with operation and maintenance of the power line.

As instructed in the CPUC's Information and Criteria List from Rule 17.1, the CEQA Checklist will be used as a guide. A summary of the checklist questions related to noise and findings is presented below.

IX. NOISE -- Would the Project result in:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❐	❐	☒	❐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	❐	❐	☒	❐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❐	❐	❐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❐	❐	☒	❐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	❐	❐	❐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	❐	❐	❐	☒

4.9.1.1 Fundamentals of Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. There are several ways to measure noise, depending on the source of the noise, the receiver, and the reason for the noise measurement. Acoustical technical noise terms are summarized in Appendix G, Glossary and Acronyms.

The most common metric is the overall A-weighted sound level measurement that has been adopted by regulatory bodies worldwide. The A-weighting network measures sound in a similar fashion to how a person perceives or hears sound, thus achieving a strong correlation in terms of how to evaluate acceptable and unacceptable sound levels.

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}), which is defined as the average noise level on an equal energy basis for a stated period of time and is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_{xx}, where xx represents the percentile of time the sound level is exceeded. Therefore, L_{90} represents the noise level that is exceeded during 90 percent of the measurement period. Similarly, L_{10} represents the noise level exceeded for 10 percent of the measurement period. Table 4.9-1 presents the relative A-weighted noise levels of common sounds measured in the environment and industry for various qualitative sound levels.

Another metric used in determining the impact of environmental noise is the differences in response that people have to daytime and nighttime noise levels. During the evening and at night, exterior background noises are generally lower than daytime levels. However, most household noise also decreases at night, and exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. To account for human sensitivity to evening and nighttime noise levels, the day-night level (DNL) average (also abbreviated as L_{dn}) and the community noise equivalent level (CNEL) were developed. The DNL is a noise metric that accounts for the greater annoyance of noise during the nighttime hours (10:00 p.m. to 7:00 a.m.). The CNEL is a noise index that accounts for the greater annoyance of noise during both the evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours.

TABLE 4.9-1
Typical Sound Levels Measured in the Environment and Industry
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Noise Source At a Given Distance	A-weighted Sound Level in Decibels	Qualitative Description
Carrier deck jet operation	140	
	130	Pain threshold
Jet takeoff (200 feet)	120	
Auto horn (3 feet)	110	Maximum vocal effort
Jet takeoff (1000 feet) Shout (0.5 feet)	100	
N.Y. subway station Heavy truck (50 feet)	90	Very annoying; Hearing damage (8-hr, continuous exposure)
Pneumatic drill (50 feet)	80	Annoying
Freight train (50 feet) Freeway traffic (50 feet)	70 to 80	
	70	Intrusive (Telephone use difficult)
Air conditioning unit (20 feet)	60	

TABLE 4.9-1
Typical Sound Levels Measured in the Environment and Industry
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Noise Source At a Given Distance	A-weighted Sound Level in Decibels	Qualitative Description
Light auto traffic (50 feet)	50	Quiet
Living room Bedroom	40	
Library Soft whisper (5 feet)	30	Very quiet
Broadcasting/Recording studio	20	
	10	Just audible

Adapted from Table E, "Assessing and Mitigating Noise Impacts", NY DEC, February 2001.

DNL values are calculated by averaging hourly L_{eq} sound levels for a 24-hour period and applying a weighting factor to the nighttime L_{eq} values. CNEL values are calculated similarly, except that a weighting factor is also added to evening L_{eq} values. The weighting factors, which reflect the increased sensitivity to noise during evening and nighttime hours, are added to each hourly L_{eq} sound level before the 24-hour DNL or CNEL is calculated. For the purposes of assessing noise, the 24-hour day is divided into three time periods, with the following weightings:

- Daytime hours: 7:00 a.m. to 7:00 p.m. (12 hours) - Weighting factor of 0 decibels, a-weighted (dBA)
- Evening hours (for CNEL only): 7:00 p.m. to 10:00 p.m. (3 hours) – Weighting factor of 5 dBA
- Nighttime hours (for both CNEL and DNL): 10:00 p.m. to 7:00 a.m. (9 hours) – Weighting factor of 10 dBA

The adjusted time period noise levels are then averaged (on an energy basis) to compute the overall DNL or CNEL value. For a continuous noise source, the DNL value is easily computed by adding 6.4 dBA to the overall 24-hour noise level (L_{eq}). For example, if the expected continuous noise level from a noise source is 60.0 dBA, the resulting DNL from the source would be 66.4 dBA. Similarly, the CNEL for a continuous noise source is computed by adding 6.7 dBA to the overall 24-hour L_{eq}.

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. No completely satisfactory way exists to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparing it to the existing or "ambient" environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

The general human response to changes in noise levels that are similar in frequency content (e.g., comparing increases in continuous (L_{eq}) traffic noise levels) are summarized as follows:

- A 3-dB change in sound level is considered a barely noticeable difference.
- A 5-dB change in sound level will typically be noticeable.
- A 10-dB change is considered to be a doubling in loudness.

4.9.2 Methodology

Evaluation of potential noise impacts from the Project included reviewing relevant county, community, and city noise standards; characterizing the noise environment; and modeling noise from constructing and operating the power line.

Noise-sensitive receptors generally are defined as locations where people reside or where the presence of unwanted sound could adversely affect the designated use of the land. Typically, noise-sensitive land uses include residences, hospitals, places of worship, libraries, and schools, as well as nature and wildlife preserves and parks.

The location of the Project in relationship to sensitive receptors within the 1-mile area is shown in Figure 4.3-1, Sensitive Receptors.

4.9.3 Existing Conditions

4.9.3.1 Regulatory Background

The CPUC has primary jurisdiction over the Project by virtue of its approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over utility projects, such projects are exempt from local land-use and zoning regulations and permitting. However, local noise standards and policies are relevant to an evaluation or impacts under CEQA.

Federal

While there are no federal regulations that limit overall environmental noise levels, there are federal guidance documents that address environmental noise and regulations for specific sources (e.g., aircraft or federally-funded highways).

The only energy facility-specific requirements are those of the Federal Energy Regulatory Commission (FERC), which regulates interstate electrical power lines, natural gas, and petroleum pipelines. The FERC limits specifically address compressor facilities associated with pipelines under its jurisdiction and limits the noise to 55-dBA DNL in noise-sensitive areas (FERC, 2002).

There are also federal highway and aircraft guidelines/regulations established by the Federal Highway Administration (FHWA) (Title 23 of the Code of Federal Regulations Part 722 [23 CFR 772]) and FAA (18 CFR 150). Table 4.9-2 presents a summary of federal guidelines/regulations.

TABLE 4.9-2
Summary of Federal Guidelines/Regulations for Exterior Noise (dBA)
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Agency	L_{eq}	DNL
Federal Energy Regulatory Commission	[49]	55
Federal Highway Administration	67	[67]
Federal Aviation Administration	[59]	65
U.S. Department of Transportation—Federal Rail and Transit Authorities[a, b]	Sliding scale, refer to Figure 4.9-1	Sliding scale, refer to Figure 4.9-1
U.S. Environmental Protection Agency[c]	[49]	55
U.S. Department of Housing and Urban Development [d]	[59]	65

Note: Brackets [59] indicate calculated equivalent standard. Because FHWA regulates peak noise level, the DNL is assumed equivalent to the peak noise hour.

Sources:

[a] Federal Railroad Administration, 1998
[b] Federal Transit Administration, 2006
[c] USEPA, 1974
[d] CFR Title 24 Part 51B

State

Although there is not a statewide noise regulation, the CEQA Checklist identifies the criteria that must be considered when analyzing a project's potential to result in temporary and permanent impacts on sensitive receptors as a result of noise.

Local

County of Santa Barbara. The County of Santa Barbara General Plan Noise Element (Santa Barbara County, 1986) contains policies that concentrate on planning for compatible uses near existing transportation facilities and imposing design standards on proposed sensitive development. The maximum exterior noise exposure compatible with noise-sensitive uses is 65-dBA DNL.

Construction noise is not addressed in the Plan. The County of Santa Barbara does not have a noise ordinance.

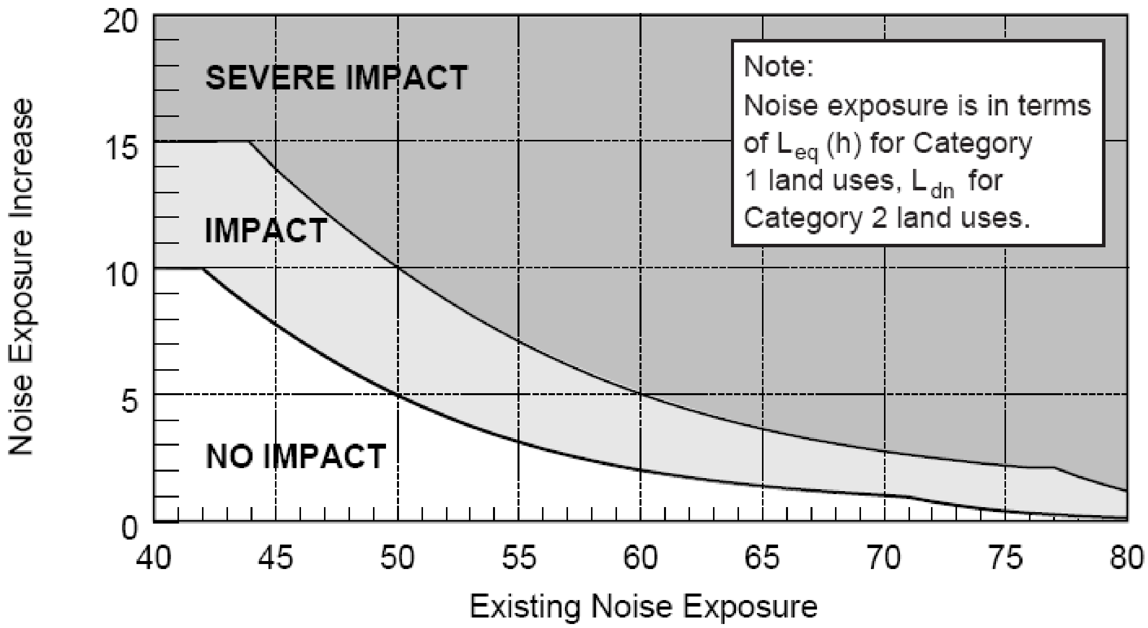


FIGURE 4.9-1
Federal Railroad Administration and Federal Transit Administration Allowable Increase in Cumulative Noise Level
(Note: Residential uses are included in Category 2).
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Community of Santa Ynez Valley. The Santa Ynez Valley Community Plan (Community of Santa Ynez Valley, 2006) lists the policies of the General Plan most relevant to the Plan area and augments the policies with region-specific policy direction. The land-use policy regarding noise states that the public shall be protected from noise that could jeopardize health and welfare. No quantitative standards are presented. The following standards regarding construction noise are listed:

- Construction activities within 1,600 feet of residential receptors shall be limited to the hours between 8:00 a.m. and 5:00 p.m., Monday through Friday.
- Stationary construction equipment that could generate noise exceeding 65 dBA at Project site boundaries shall be shielded to County Planning and Developments satisfaction, and shall be located a minimum of 200 feet from sensitive receptors.

City of Lompoc. The City of Lompoc General Plan (City of Lompoc, 1997) identifies policies, such as limiting noise at the source and quantifying noise levels, in determining land-use designations and maximum noise levels allowable for new developments. Table 4.9-3 presents the noise standards. Noise levels may not exceed 75 CNEL at any noise-sensitive land uses.

TABLE 4.9-3
Interior and Exterior Noise Standards
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Land-use Category		CNEL	
Category	**Uses**	**Interior**	**Exterior**
Residential	Single Family, Duplex, Multiple Family, Mobile Home	45	60
Commercial and Industrial	Retail, Restaurant	55	65
	Motel	45	60
	Professional Offices, Movie Theater, Auditorium	45	65
	Manufacturing, Utilities Warehousing, Agriculture	65	75
Community Facility	Hospital, School, Nursing Home, Church, Library, Civic Offices, Parks	45	65
Open Space	Passive Outdoor Recreation	--	60

Source: City of Lompoc, 1997.

The City of Lompoc Municipal Code Section 8.08.030E (City of Lompoc, 2009) limits construction of buildings and projects as follows:

> *It shall be unlawful for any person within a residential zone, as defined in Chapter 17.004, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures or projects or to the operation of any pile driver, power shovel, pneumatic hammer, derrick, power hose, or any other construction type device, between the hours of 9:00 p.m. of one day and 7:00 a.m. the next day in such a manner that a reasonable person of normal sensitivity residing in the area is caused discomfort or annoyance unless beforehand a permit therefore has been duly obtained from the Fire Marshal/Building Official. No permit shall be required to perform emergency work which is hereby defined to mean work necessary to restore property to a safe condition following a public calamity or work required to protect persons or property from an imminent exposure to danger or work by private or public utilities when restoring utility service.*

4.9.3.2 Environmental Setting

The Project will roughly parallel SR 246 between SR 1 in Lompoc and US 101 north of Buellton. The line connects Cabrillo Substation to Santa Ynez Switching Station. Land use along the Project is primarily agricultural and rural-residential. Cabrillo Substation is within a light industrial area in the eastern extent of the City of Lompoc.

The 0.5-mile study area includes sensitive noise receptors located in unincorporated Santa Barbara County, including the Community of Santa Ynez Valley and the City of Lompoc. Thirty-eight residences are located within the Community of Santa Ynez Valley. Of these, two are located within 200 feet of the power line, six are located within 400 feet, and 16 are located within 1,000 feet.

Twenty-four residences are located within unincorporated Santa Barbara County outside of the Community of Santa Ynez Valley. No residences are located within 200 feet, one is located within 400 feet and nine are located within 1,000 feet.

Within the City of Lompoc, the nearest residence is located approximately 700 feet from the power line. Two parks (Pioneer Park and River Park) and a place of worship (First Presbyterian Church) are also located within the study area. River Park is located 723 feet from the power line; Pioneer Park is located 2,343 feet from the line; First Presbyterian Church is located 2,022 feet from the line.

4.9.4 Potential Impacts and Mitigation

The following section describes significance criteria for noise impacts derived from the CEQA Checklist, applicant proposed measures, and potential Project-related construction and operational impacts.

4.9.4.1 Significance Criteria

The significance of potential impacts was assessed in accordance with the CEQA Checklist (Title 14 of the California Code of Regulations 15000 et seq.), as presented in Section 4.9.1 and listed below.

The CEQA Checklist defines a "significant effect" on the environment to mean a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including...ambient noise" (Title 14 of the California Code of Regulations Section 15382). CEQA does not specify a threshold for "substantial increase" for noise, and neither have the local jurisdictions. For purposes of evaluating potential noise impacts, the following thresholds of significance were used during the evaluation of noise during construction and operation of the Project.

The Federal Transit Administration (FTA) provides guidelines for reasonable criteria for assessment of construction noise (FTA, 2006). According to the FTA, construction noise that exceeds a 1-hour L_{eq} of 90 dBA or an 8-hour L_{eq} of 80 dBA during the day would provoke adverse community reaction. Noise associated with construction would be potentially significant if: (1) the construction activity is permanent; (2) use of heavy equipment will occur after daytime hours; (3) noise exceeds applicable local standards or, in the absence of local standards, exceeds the FTA guidance discussed above; and (4) no feasible noise abatement measures can be implemented for noise-producing equipment.

The above thresholds were established based on the following federal and California guidance. The United States Environmental Protection Agency (USEPA) guidelines recommend an L_{dn} of 55 dBA (49 dBA L_{eq}) as sufficient to protect the public from the effects of broadband environmental noise in quiet outdoor settings and residential neighborhoods (USEPA, 1974). The FAA and the Federal Interagency Committee on Urban Noise have issued land-use compatibility guidelines indicating that a yearly L_{dn} of less than 65 dBA (59 dBA L_{eq}) is compatible with residential land uses and that, if a community determines it is necessary, levels up to 75 dBA (69 dBA L_{eq}) may be compatible with residential uses and transient lodgings (but not mobile homes), if such structures incorporate noise-reduction features (14 CFR 150, Appendix A). FERC requires natural-gas pipelines to demonstrate that stations with compressors will not exceed an L_{dn} of 55 dBA (49 dBA L_{eq}) in noise-sensitive areas such as schools, hospitals, and residences (18 CFR 380.12(k)(4)(v)(A)). A noise level of 40 dBA would be considered quiet in many locations and would be consistent with the recommendations of the California Model Community Noise Control Ordinance for rural environments. A 5-dBA change in sound level is typically necessary to result in a noticeable community response, as a 3-dBA increase is generally considered the threshold of perceptible change outside of a laboratory when comparing similar sources of noise.

Criteria without anticipated impacts are discussed briefly in the following criteria list. Criteria with anticipated less than significant impacts are discussed in more detail in Section 4.9.4.3 Construction, Temporary Impacts.

Would the Project result in:

IX.a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? With the implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5, potential impacts are less than significant.

Construction will be temporary and limited in duration at each pole site. This impact will be less than significant with the implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5 as discussed in Section 4.9.2.3.

IX.b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? No impact will result; no mitigation is needed.

Construction will be temporary and limited in duration at each pole site. This impact will be less than significant as discussed in Section 4.9.2.3. There are no changes to existing conditions expected during operation and maintenance; therefore, no impact will result and no mitigation is needed.

IX.c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? No impact will result; no mitigation is needed.

Noise from construction of the proposed Project will be short term (one to two days at each pole site) and temporary and will result in no permanent increase in ambient noise levels; therefore, the proposed Project will result in no impact under this criterion. There are no changes to existing conditions expected during operation and maintenance; therefore no impact will result and no mitigation is needed.

IX.d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? With the implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5, potential impacts are less than significant.

Construction will be temporary and limited in duration at each pole site. This impact will be less than significant with implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5 as discussed in 4.9.2.3. There are no changes to existing conditions expected during operation and maintenance; therefore no impact will result and no mitigation is needed.

IX.e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? No impact will result; no mitigation is needed.

Construction of the proposed Project will occur at a distance greater than 2 miles from a public airport, and there will be no impact under this criterion.

IX.f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? No impact will result; no mitigation is needed.

No private airstrips are located within 2 miles of the proposed Project (Santa Barbara County, 2008); therefore, construction and operation and maintenance of the proposed Project will result in no impact under this criterion and no mitigation is needed.

4.9.4.2 Applicant Proposed Measures

As part of constructing the Project, the following noise-abatement measures will be implemented and will be considered during evaluation of the potential noise impacts:

APM Noise (NO)-1: Noise minimization with portable barriers. Compressors and other small stationary equipment will be shielded with portable barriers in proximity to residential areas.

APM NO-2: Noise minimization with "quiet" equipment. "Quiet" equipment (i.e., equipment that incorporates noise-control elements into the design—compressors have "quiet" models) will be used during construction whenever possible.

APM NO-3: Noise minimization through direction of exhaust. Equipment exhaust stacks and vents will be directed away from buildings.

APM NO-4: Noise minimization through truck traffic routing. Truck traffic will be routed away from noise-sensitive areas where feasible.

APM NO-5: Noise disruption minimization through residential notification. PG&E will coordinate with the City of Lompoc and the County of Santa Barbara to notify residents that are located near the power lines of the timeframe for the construction activities.

4.9.4.3 Construction

Equipment used in the construction of the Project includes augers, brush-hogs, trucks, derrick booms, graders, and a helicopter. Typical noise levels generated by the construction equipment listed in the Project description have been calculated previously and published in various reference documents. One of the most recent and complete compilations of construction equipment noise is the Roadway Construction Noise Model (FHWA, 2006). The expected equipment noise levels listed in the *Roadway Construction Noise Model User's Guide* were used for this evaluation (FHWA, 2006). The User's Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Table 4.9-4 summarizes the average (L_{eq}) noise level at several distances. Equipment expected to be used during Project construction is in bold font; other construction equipment is included for reference.

TABLE 4.9-4
Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Equipment Description	Acoustical Usage Factor (%)	Specified L_{max} @ 50 ft (dBA)	Calculated L_{eq} @ 100 ft (dBA)	Calculated L_{eq} @ 1000 ft (dBA)	Calculated L_{eq} @ 2000 ft (dBA)	Calculated L_{eq} @ 4000 ft (dBA)
All Other Equipment > 5 HP	50	85	76	56	50	44
Auger Drill Rig	**20**	**85**	**72**	**52**	**46**	**40**
Backhoe	40	80	70	50	44	38
Bar Bender	20	80	67	47	41	35
Blasting	-- N/A --	94	88	68	62	56
Boring Jack Power Unit	50	80	71	51	45	39
Chain Saw	**20**	**85**	**72**	**52**	**46**	**40**
Clam Shovel (dropping)	20	93	80	60	54	48
Compactor (ground)	20	80	67	47	41	35
Compressor (air)	40	80	70	50	44	38
Concrete Batch Plant	15	83	69	49	43	37
Concrete Mixer Truck	40	85	75	55	49	43
Concrete Pump Truck	20	82	69	49	43	37
Concrete Saw	20	90	77	57	51	45
Crane	16	85	71	51	45	39
Dozer	40	85	75	55	49	43
Drill Rig Truck	20	84	71	51	45	39
Drum Mixer	50	80	71	51	45	39
Dump Truck	40	84	74	54	48	42
Excavator	40	85	75	55	49	43
Flat Bed Truck	40	84	74	54	48	42
Front End Loader	40	80	70	50	44	38
Generator	50	82	73	53	47	41
Generator (<25 kVA, VMS signs)	50	70	61	41	35	29
Gradall	40	85	75	55	49	43
Grader	**40**	**85**	**75**	**55**	**49**	**43**
Grapple (on backhoe)	40	85	75	55	49	43
Horizontal Boring Hydr. Jack	25	80	68	48	42	36
Hydra Break Ram	10	90	74	54	48	42
Impact Pile Driver	20	95	82	62	56	50
Jackhammer	20	85	72	52	46	40
Man Lift	**20**	**85**	**72**	**52**	**46**	**40**
Mounted Impact Hammer (hoe ram)	20	90	77	57	51	45
Pavement Scarafier	20	85	72	52	46	40
Paver	50	85	76	56	50	44
Pickup Truck	**40**	**55**	**45**	**25**	**19**	**13**

TABLE 4.9-4
Construction Equipment Noise Levels from the Roadway Construction Noise Model User's Guide
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Equipment Description	Acoustical Usage Factor (%)	Specified L_{max} @ 50 ft (dBA)	Calculated L_{eq} @ 100 ft (dBA)	Calculated L_{eq} @ 1000 ft (dBA)	Calculated L_{eq} @ 2000 ft (dBA)	Calculated L_{eq} @ 4000 ft (dBA)
Pneumatic Tools	50	85	76	56	50	44
Pumps	50	77	68	48	42	36
Refrigerator Unit	100	82	76	56	50	44
Rivet Buster/chipping gun	20	85	72	52	46	40
Rock Drill	20	85	72	52	46	40
Roller	20	85	72	52	46	40
Sand Blasting (Single Nozzle)	20	85	72	52	46	40
Scraper	40	85	75	55	49	43
Shears (on backhoe)	40	85	75	55	49	43
Slurry Plant	100	78	72	52	46	40
Slurry Trenching Machine	50	82	73	53	47	41
Soil Mix Drill Rig	50	80	71	51	45	39
Tractor	40	84	74	54	48	42
Vacuum Excavator (Vac-truck)	40	85	75	55	49	43
Vacuum Street Sweeper	10	80	64	44	38	32
Ventilation Fan	100	85	79	59	53	47
Vibrating Hopper	50	85	76	56	50	44
Vibratory Concrete Mixer	20	80	67	47	41	35
Vibratory Pile Driver	20	95	82	62	56	50
Warning Horn	5	85	66	46	40	34
Welder/Torch	40	73	63	43	37	31

Source*:* FHWA, 2006.
Equation to calculated L_{max} at 1,000, 2,000 and 4,000 feet is as follows:
$L_{eq}(h) = L_{max} + 10 \log U.F. - 20 \log(D/Do)$
where:
L_{max} = Maximum noise emission level of equipment based on work cycle at distance Do (dB).
A.U.F. = Acoustical usage factor, which accounts for the percent time that equipment is in use over the time period of interest (1 hour).
D = Distance from the equipment to the receptor (feet).
Do = Reference distance (generally, 50 feet) at which the L_{max} was measured for the equipment of interest (feet).

Review of the typical construction equipment noise levels in Table 4.9-4 indicates that the loudest equipment generally emits noise in the range of 80 to 90 dBA at 50 feet, with usage factors of 40 percent to 50 percent. Noise at any specific receptor is dominated by the closest and loudest equipment. The types and numbers of construction equipment near any specific receptor location will vary over time. In order to make reasonably conservative estimates of construction noise, it was decided to model a scenario consisting of:

- One piece of equipment generating a reference noise level of 85 dBA (at 50 feet distance with a 40-percent usage factor) located on the power line route.

- Two pieces of equipment generating reference 85-dBA noise levels located 50 feet farther away on the power line route (100 feet distance with a 40 percent usage factor).
- Two additional pieces of equipment generating reference 85-dBA noise levels located 100 feet farther away on the power line route (200 feet distance with a 40 percent usage factor).

Table 4.9-5 presents construction equipment noise levels at various distances based on this scenario.

TABLE 4.9-5
Construction Equipment Noise Levels versus Distance
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Distance from Construction Activity (feet)	L_{eq} Noise Level (dBA)
50	83
100	79
200	74
400	69
800	63
1,600	58
3,200	52
6,400	46

Four pole sites are not accessible by ground equipment; therefore, the new poles will be delivered and assembled, and the old poles removed, by helicopter. Noise from the helicopter operated on the one day of construction at these four pole sites will be audible at the laydown area, pole installation sites, and along flight paths. The helicopter will pick up the pole sections from the laydown area and place them at each location.

Helicopter noise levels range from 77 to 84 dBA during takeoff and from 72 to 77 dBA during landing. Sound pressure levels for a helicopter in level flight and traveling at an altitude 500 feet with an airspeed of about 60 knots will range from about 77 to 94 dBA during 4 seconds before and after passing directly overhead (United States Department of Energy et al., 2008).

Because the helicopter will be used in relatively undeveloped areas, the potential for disturbance to large numbers of residences is small. The three nearest residences to Pole 82 are located approximately 2,000 feet away from the activity area. Poles 95-97 are over 1.5 miles from the nearest residences. In addition, helicopter operations will be of short duration, and impacts will be limited to laydown areas, pole sites, and along flight paths and will be temporary.

Potential Impact NO-1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. This impact will be less than significant with the implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and APM NO-5.

Construction activities will be short term at each pole location (one or two days), temporary, and limited to daytime hours, consistent with the local requirements, as practical. The implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5 will minimize exposure to construction noise; therefore, construction of the proposed Project will result in a less than significant impact under this criterion.

Potential Impact NO-2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. This impact will be less than significant and no mitigation is needed. Construction activities (e.g., ground-disturbing activities, including grading and movement of heavy construction equipment) may generate localized groundborne vibration and noise. Heavy equipment operation is not anticipated to result in excessive groundborne vibration. Any groundborne vibration and noise will occur during daytime hours and will be short term and temporary. Therefore, construction of the proposed Project will result in a less than significant impact under this criterion.

Potential Impact NO-3. Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This impact will be less than significant with the implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5. Any increases in ambient noise levels in the Project vicinity during construction will be short term, intermittent, and temporary. Removal and replacement of poles will occur over a few hours on one or two days.

The FTA provides guidelines for reasonable criteria for assessment of construction noise (FTA, 2006). According to the FTA, construction noise that exceeds a 1-hour L_{eq} of 90 dBA or an 8-hour L_{eq} of 80 dBA during the day would provoke adverse community reaction. The nearest distance to poles from residences is approximately 150 feet. According to the modeling results shown in Table 4.9-5, noise levels would decline from 79 dBA at 100 feet from the construction activity to 74 dBA at 200 feet. With implementation of APM NO-1, APM NO-2, APM NO-3, APM NO-4, and AMP NO-5 exposure to construction noise will be minimized; therefore, construction of the proposed Project will result in less than significant impact under this criterion.

4.9.4.4 Operation and Maintenance

Operation and maintenance activities associated with the implementation of the Project are not expected to change from the current practices and no impacts are expected.

4.9.5 Works Cited

City of Lompoc. 1997. *City of Lompoc General Plan.* October 27.

__________. 2009. Codified City of Lompoc Ordinances. Web site: http://qcode.us/codes/lompoc. Accessed February 23.

Community of Santa Ynez Valley. 2006. *Draft Santa Ynez Valley Community Plan.* Draft. September 26.

Federal Energy Regulatory Commission (FERC). 2002. *Guidance Manual for Environmental Report Preparation*. August. Available online at: http://www.ferc.gov/ industries/gas/enviro/erpman.pdf. Site accessed October 2007.

Santa Barbara County. 1986. *County of Santa Barbara General Plan Noise Element*. March 5, 1979, amended February 11, 1986.

United States Department of Energy, the United States Department of the Interior Bureau of Land Management, the United States Department of Agriculture Forest Service, and United States Department of Defense. 2008. *Programmatic Environmental Impact Statement, Designation of Energy Corridors on Federal Land in the 11 Western States (DOE/EIS-0386).* Available online at: http://corridoreis.anl.gov/documents/fpeis/index.cfm). November.

United States Department of Transportation, Federal Railroad Administration. 1998. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. December. Available online at: http://www.fra.dot.gov/downloads/RRDev/nvman1_75.pdf. Site accessed October 2007.

United States Department of Transportation, Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model (RCNM) User's Guide*. Final Report. FHWA-HEP-05-054, DOT-VNTSC-FHWA-05-01). January.

United States Department of Transportation, Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06. May.

United States Environmental Protection Agency (USEPA). 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, EPA-550/9-74-004*. March.

4.10 Population, Housing, Public Services, Utilities and Service Systems

4.10.1 Introduction

This section describes the existing conditions and potential impacts on population, housing, public services, utilities and service systems as a result of the implementation of the Project. Public services include fire and police protection, and maintenance of public facilities such as schools and hospitals. Utilities and service systems include power, natural gas, communications, water treatment and distribution, sewer and septic facilities, stormwater drainage, solid waste disposal, and local and regional water supplies. Figure 4.10-1 illustrates the public services located within a l-mile radius of the Project facilities. The following significance criteria derived from the CEQA Checklist summarizes the significance of the potential impacts to population, housing, utilities and services systems.

XII. POPULATION AND HOUSING -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❐	❐	❐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❐	❐	❐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❐	❐	❐	☒
XIII. PUBLIC SERVICES -- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (i) Fire protection? (ii) Police protection? (iii) Schools? (iv) Parks? (v) Other public facilities?	❐	❐	❐	☒
XVI. UTILITIES AND SYSTEM SERVICES-- Would the Project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❐	❐	❐	☒

XII. POPULATION AND HOUSING -- Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❐	❐	❐	☒
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❐	❐	❐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❐	❐	❐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❐	❐	❐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❐	❐	❐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❐	❐	❐	☒

Implementation of the Project will result in no impacts as evaluated against population, housing, utilities and services systems criteria.

4.10.2 Methodology

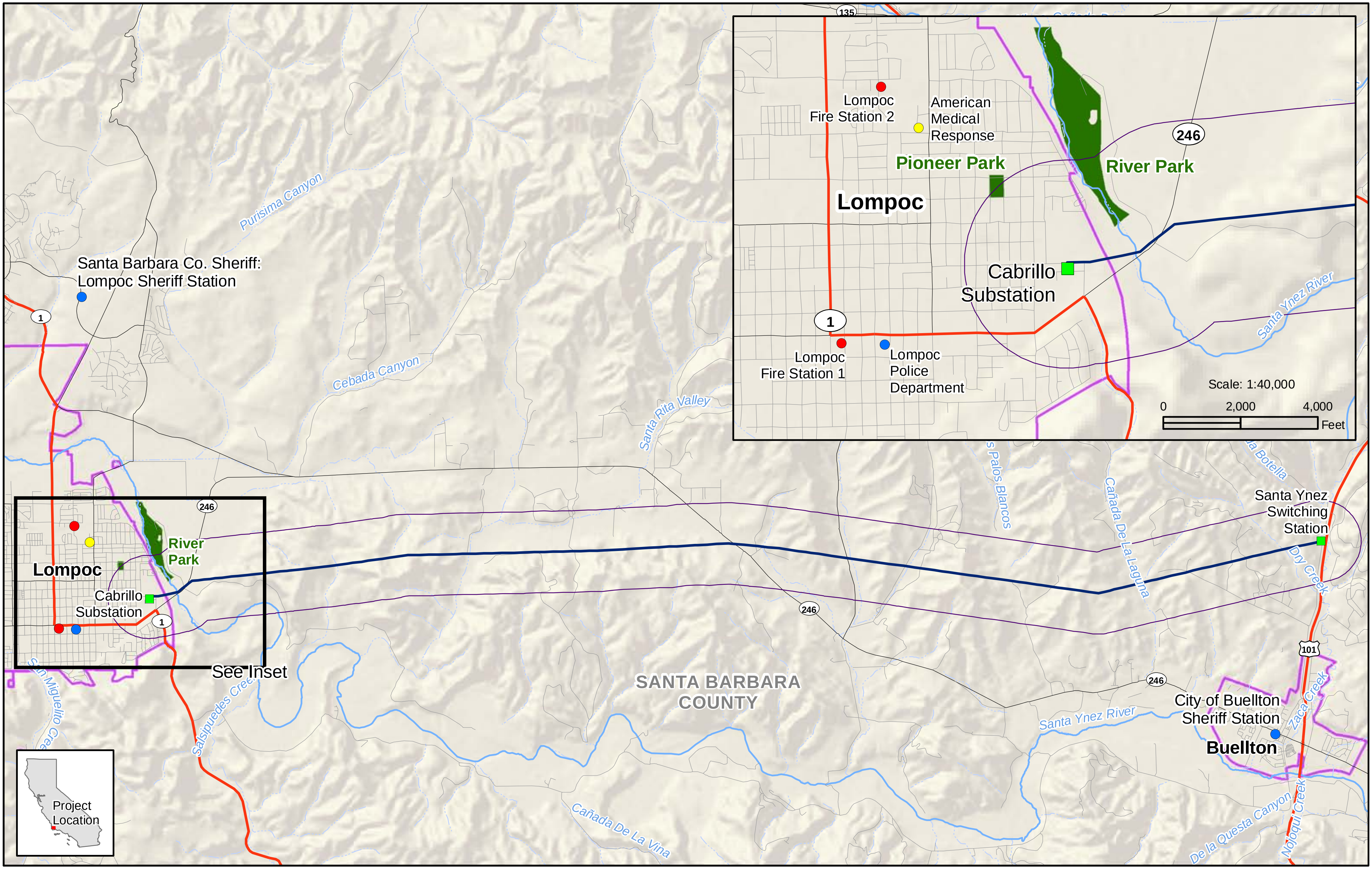
Information for analysis of impacts was obtained through literature searches of public utility plans, websites, reports, local agency general plans, and census data.

4.10.3 Existing Conditions

4.10.3.1 Regulatory Background

Federal

Occupational Safety and Health Administration (OSHA) of 1970. OSHA is a federal law aimed at providing workers safe and healthful working conditions. The Act also created the Occupational Safety & Health Administration, which oversees and enforces worker safety. Job site conditions will be maintained in accordance with this law.



Substation
Cabrillo - Santa Ynez Power Line
Half-mile Radius Around Power Line
City Boundaries
Creeks
Rivers
Highway
Major Road
Local Road
Parks
Fire Station
Police Station
EMT

Rev. 6: 06/29/2009

FIGURE 4.10-1
Public Services
Within the Project Area
Cabrillo - Santa Ynez
115kV Reconductoring Project

0 1 2 Miles
Scale: 1:100,000

State

California Occupational Safety and Health Act of 1973. This Act establishes regulations for a safe working environment. The California Office of Safety and Health Administration (Cal-OSHA) is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Job site conditions will be maintained in accordance with this law.

Title 12 CCR Sections 1250-1258 "Fire Prevention Standards for Electric Utilities." Provides clearance standards for electric poles and tower firebreaks and electric conductors.

CPUC General Order 95, "Rules for Overhead Electric Line Construction." Section 35: CPUC rule covers all aspects of design, construction, operation, and maintenance of electrical power line and fire safety hazards.

Local

As a utility project under the CPUC's jurisdiction permit, the Project is not subject to local discretionary agency approval. However, PG&E has considered local plans and policies as part of the environmental review process. The 14.1-mile reconductoring begins approximately 0.5 mile east of Cabrillo Substation (12th and Industrial Street, Lompoc, California 93436) and extends through the Santa Ynez Valley in unincorporated Santa Barbara County to the terminus at Santa Ynez Switching Station (1811 Jonata Park Road, Buellton, California 93427). Local plans and ordinances including the *Santa Barbara County Comprehensive Plan*, the Santa Barbara County Uniform Rules for Agricultural Preserves and Farmland Security Zones (Uniform Rules), the *Draft Santa Ynez Valley Community Plan*, the Land Use and Development Code, and the City of Lompoc General Plan and Municipal Code were evaluated and are discussed in Section 4.2.3.3.

4.10.3.2 Environmental Setting

Population and Housing

The Project is located within the County of Santa Barbara with an estimated land area of 2,737 square miles (U.S. Census Bureau, 2000). The existing 115 kV power line corridor is located in a predominately rural area beginning in the City of Lompoc and extending east through the Santa Rita Hills area terminating at Santa Ynez Switching Station near US 101, approximately 2 miles north of the City of Buellton. The 2007 population estimate for Santa Barbara County is 404,197 (U.S. Census Bureau, 2007). Population and housing centers are primarily located in the incorporated cities, which include Buellton, Carpinteria, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria and Solvang.

The primary population centers in the Project area are in the incorporated cities of Lompoc and Buellton. According to City-Data.com, the populations of Lompoc and Buellton as of July 2007 are 40,442 and 4,304, respectively.

Lompoc and Buellton experienced significant growth over the past five years (City of Buellton, 2004).These communities provided affordable housing within a reasonable commuting distance to the larger cities of Santa Barbara and Santa Maria, the two primary employment hubs in Santa Barbara County. Lompoc is currently updating the Housing Element of its General Plan. The City must adopt an updated Housing Element by August

2009. The implementation phase begins on January 1, 2009, and continues to June 30, 2014 (Thomas E. Figg, 2008).

Public Services

Fire Protection. The Santa Barbara County Fire Department (SBCFD) provides fire protection and paramedic services to the unincorporated portions of the Project area. The SBCFD staffs a total of 15 fire stations throughout the County and selected incorporated areas. In the Project area, the SBCFD maintains a mutual aid agreement with the City of Buellton Fire Department. This agreement enables the fire departments to share resources and respond to emergencies in a timely manner. The SBCFD would be designated as the first responder for all Project-related incidents in unincorporated areas. Emergency calls would be directed to SBCFD, but may also be routed to the City of Lompoc or City of Buellton depending on the location and severity of the incident; either one of these agencies could be first on the scene (Aspen Environmental Group, 2008). The SBCFD strives to meet a 5-minute response time to fires and paramedic calls within its coverage area (Aspen Environmental Group, 2008). No response time has been established for rural areas like the Project site.

There are two County fire stations most likely to serve the Project area. Station No. 51 is located at 3510 Harris Grade Road near Lompoc. Engine 51's response area is bounded in the north by SR 1 at San Antonio Creek, in the south at the Los Cruces Grade on SR 1, in the east by Drum Canyon at SR 246, and in the west by the Pacific Ocean. Medic 51's response area is bounded in the north by SR 1 at San Antonio Creek, in the south at SR 1 and the convergence of Ytisas and El Jaro Creeks, in the east at SR 246 and Drum Canyon, and the west by the Pacific Ocean.

Station No. 31 is located at 168 West Highway 246 in Buellton. Station 31's service area extends in the north to a line about 2 miles north of SR 154 and the southern boundary ends at the top of the Nojoqui Grade. In the east the service area ends at the Solvang city limit, and the western boundary extends to the intersection of SR 246 and Campbell Road.

The City of Lompoc Fire Department provides fire protection services within city limits. They strive to meet a 5-minute response time within the city limits. Two fire stations are located within the city, at 115 South G Street (Station No. 1) and 1100 North D Street (Station No. 2) (Figure 4.10-1). Station No. 1 is closest to the Project area, approximately 1 mile southwest of Cabrillo Substation, and would likely be the first responder to an incident. Fire Station No. 1 includes the following equipment and personnel: one engine, aerial ladder truck in reserve, four personnel, and one chief, although the staffing fluctuates with three or four personnel on duty (Robert Olson Associates, 2007)

The City of Lompoc Fire Department does not employ paramedics, relying instead on a private ambulance company (American Medical Response) and the SBCFD for emergency paramedic services. The American Medical Response station that serves the city is located at 701 E. North Avenue (Figure 4.10-1).

Police Services. The Santa Barbara County Sheriff's Department (SBCSD) is responsible for providing police protection in the unincorporated County area and the City of Buellton. The Sheriff's Department is staffed with nearly 300 sworn deputy sheriffs, over 175 sworn corrections officers, and nearly 200 civilian employees (SBCSD, 2006).

Although the SBCSD does not maintain formalized mutual aid agreements with other law enforcement agencies, it may rely on other agencies to assist in responding to a call as needed. For major public disasters, the process is more formalized, and the Santa Barbara County Office of Emergency Services would be involved to coordinate a large-scale, multiagency response (Aspen Environmental Group, 2008).

The City of Lompoc has a dedicated police force. As of 2007, there are 51 sworn and 16 part-time officers, 22 staff, 40 volunteers and 10 explorers. The police station is located at 107 Civic Center Plaza, approximately 1.5 miles from Cabrillo Substation (Organizational Effectiveness Consulting, 2006).

Schools. **Lompoc Unified School District.** The Lompoc Unified School District provides elementary through high school education to the City of Lompoc and surrounding areas. The elementary schools include: Buena Vista, Clarence, Ruth, Crestview, Fillmore, Hapgood, La Cañada, La Honda, Los Berros, and Miguelito. Middle schools include Lompoc Valley and Vandenberg. High Schools include Cabrillo, Lompoc and Maple.

Buellton Union School District. The Buellton Union School District includes one elementary school, Oak Valley School, serving grades K-5. Jonata School serves grades 6-8.

Santa Ynez Valley Union High School District. The Santa Ynez Valley Union High School District includes two high schools: Refugio High School and Santa Ynez Valley Union High School.

Parks. The Santa Barbara County Park Department maintains more than 900 acres of parks and open spaces, 84 miles of trails and coastal access easements, and the grounds surrounding county buildings. Park rangers or hosts reside in every major park to provide public assistance and supervise the grounds. There is one County park within the vicinity of the Project. Santa Rosa Park is located midway between Lompoc and Buellton near SR 246; this small multi-level park is rich with live oak, native ferns and wildflowers. Picnic areas, horseshoes, a playground and a volleyball court round out its amenities.

There are two public parks within a one-mile radius of Cabrillo Substation: Pioneer Park and River Park. Pioneer Park is a neighborhood park featuring a regulation sized baseball field, spectator areas, a playground, park benches, a small pre-school building, open turfed areas, and large mature trees providing wind breaks and shade areas. River Park consists of 45 developed acres and is a linear park which lies adjacent to the Santa Ynez River on the eastern border of Lompoc.

There are no park facilities within the immediate vicinity of Santa Ynez Switching Station.

Other Public Facilities. Since the Project only involves reconductoring an existing 115 kV power line and replacement of support poles, implementation of the Project is not anticipated to have any impacts on other public facilities not otherwise discussed in this section.

Utilities and Service Systems

Water Availability. Potable water in the incorporated cities within the Project area is provided by the City of Buellton and the City of Lompoc (City of Lompoc, 2005). In the more rural valley area, properties are served by private water wells, which are administered by the

Environmental Health Services Division of the County Public Health Department. Groundwater is an important source of potable water in the general Project area, supplying the City of Lompoc, much of the surrounding unincorporated area, and Vandenberg Air Force Base.

Wastewater. Wastewater treatment in the incorporated cities within the Project area is provided by the City of Buellton and City of Lompoc. In the more rural valley area, properties are served by private septic systems, which are administered by the Environmental Health Services Division of the County Public Health Department.

Electricity. PG&E provides electrical power to the northern portions of Santa Barbara County. The southern portion of the County is served by Southern California Edison. The City of Lompoc acts as its own electrical utility and provides power to users within city limits. Power is provided by PG&E to customers outside Lompoc city limits, including consumers along the power alignment and within Buellton city limits.

Natural Gas. Southern California Gas Company is the provider of natural gas to the County of Santa Barbara and the immediately adjacent counties: San Luis Obispo, Kern, and Ventura, including the City of Lompoc and surrounding areas.

Communications. Verizon is the local telephone communication service provider in the Lompoc Valley, including Solvang and Buellton. The City of Lompoc also operates its own wireless internet service, LompocNet, through the City's Broadband Division. Cable television services within the City of Lompoc are provided by Comcast Cable.

Stormwater Drainage. Stormwater is controlled in the incorporated cities through the Public Works Department of the cities of Buellton and Lompoc. In the rural, unincorporated area, stormwater typically sheet flows to the nearest water course or is controlled through onsite private storm drains. Santa Barbara County, Division of Building & Safety issues permits for storm drain facilities.

Storm drains and flood control within the city limits of Lompoc, Solvang, and Buellton are maintained by each City respectively. Flood control catch basins and channels are maintained by the County of Santa Barbara.

Solid Waste Disposal. The County Solid Waste Division of the Public Works Department is responsible for waste collection in the unincorporated areas of the County. The Lompoc Valley falls into Zone 4 and is serviced by Waste Management, Inc., a franchised waste hauler. Santa Ynez Valley falls under Zone 5 and is also serviced by Waste Management. The County owns and operates the Tajiguas Landfill, the Santa Ynez Valley Recycling and Transfer Station, the South Coast Recycling and Transfer Station, the New Cuyama Transfer Station, and the Ventucopa Transfer Station. Other landfills located within the County are operated by the municipalities in which they are located, and Vandenberg Air Force Base possesses its own landfill (Aspen Environmental Group, 2008).

The City of Lompoc operates a sanitary landfill on Avalon Road. There is a charge to haul refuse to the facility, unless it is recyclable material. Regular weekly refuse service is offered by the City of Lompoc. Service includes pick-up of regular household waste, recyclable material and green waste material. In Buellton, garbage service is provided by Waste Management, Inc.

4.10.4 Potential Impacts and Mitigation

4.10.4.1 Significance Criteria

Significance criteria for population and housing, public services and utilities and service systems were derived from the CEQA Checklist. Impacts are not anticipated for these criteria. A brief discussion follows under each criterion.

Population and Housing
Would the Project:

XII.a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? No impact will result; no mitigation is needed.

The Project does not include new housing or businesses, land use changes, or infrastructure increases that will induce substantial population growth in the area. Construction workers will be drawn from existing PG&E staff in the local area or commute from the neighboring cities. Because the construction duration is short and the local workforce is anticipated to be sufficient, it is not expected that the construction workforce will relocate to the area; therefore no impact is anticipated.

XII.b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? No impact will result; no mitigation is needed.

The Project will not displace housing, nor will replacement housing need to be constructed; therefore, no impact is anticipated.

XII.c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? No impact will result; no mitigation is needed.

The Project will not displace people, nor will replacement housing need to be constructed; therefore, no impact is anticipated.

Public Services
Would the Project:

XIII.a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

(i) Fire protection?
(ii) Police protection?
(iii) Schools?
(iv) Parks?
(v) Other public facilities? No impact will result; no mitigation is needed.

No new or altered governmental facilities are needed; therefore, no impact will occur.

Utilities and Service Systems

Would the Project:

XVI.a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? No impact will result; no mitigation is needed.

The minimal amount of effluent generated by construction workers will not cause a wastewater treatment plant to exceed its treatment capacity. Wastewater treatment requirements will not be exceeded; therefore no impact will occur.

XVI.b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? No impact will result; no mitigation is needed.

The Project will not require the construction of new, or expansion of existing, water facilities; existing supplies are sufficient to provide water for dust control.

Wastewater service will be provided by portable toilets with waste disposed of at appropriately licensed facilities offsite. The minimal amount of effluent generated by construction workers will not cause a wastewater treatment plant to exceed its treatment capacity. Therefore, there will be impacts expected to water or wastewater treatment facilities resulting in the need for new or expanded facilities.

XVI.c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? No impact will result; no mitigation is needed.

The proposed Project will not cause the need for or result in new or expanded stormwater drainage facilities; therefore, no impacts are anticipated.

XVI.d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? No impact will result; no mitigation is needed.

The primary need for water will be dust control activities associated with the 40- by 100-foot area around replaced poles. The alignment accessed by existing access roads and only minimal grading is expected to reestablish select access roads, which will not require large quantities of water. Water will be trucked from Lompoc and Buellton as needed. Potable water for construction workers will be available at Cabrillo Substation and Buellton Service Center Yard and also brought in with construction equipment. The minimal water needed for dust control and construction crew consumption will not exceed available supplies. Sufficient existing water supplies are available; therefore, no impact will result.

XVI.e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? No impact will result; no mitigation is needed.

The Project will require portable toilets for construction workers. Sanitary waste will be disposed of at appropriately licensed official facilities with adequate capacity.

Licensed official facilities in the area have adequate capacity and no impact will result.

XVI.f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? No impact will result; no mitigation is needed.

On average, approximately 2 cubic yards of food, glass, paper, plastic and packing materials will be generated for every month of construction activity. No impact will result to existing landfill to accommodate this solid waste. Wood poles removed from the Project will be taken to a licensed Class 1 or a composite-lined portion of a solid waste landfill (see Section 4.7, Hazards and Hazardous Materials, for additional discussion). The landfills have adequate capacity and no impact will result.

XVI.g) Comply with federal, state, and local statutes and regulations related to solid waste? No impact will result; no mitigation is needed.

PG&E will comply with all federal, state and local statutes related to solid waste. Therefore, the proposed Project will be in compliance with statutes and regulations resulting in no impact.

4.10.4.2 Applicant Proposed Measures

Construction and operation and maintenance activities will have no impact; therefore, no applicant proposed measures are suggested.

4.10.4.3 Construction

Construction activities will have no impact.

4.10.4.4 Operation and Maintenance

Operation and maintenance activities will have no impact.

4.10.5 Works Cited and References

4.10.5.1 Works Cited

Aspen Environmental Group. 2008. *Lompoc Wind Energy Project, Final Environmental Impact Report.* August.

City of Buellton. 2004. *General Plan* (Housing Element Update.)

City of Lompoc. 1997. *City of Lompoc General Plan.* Amended 2005.

__________. 2005. City of Lompoc 2005 Urban Water Management Plan.

Organizational Effectiveness Consulting. 2006. *City of Lompoc, Police Services Study*. December.

Robert Olson Associates, Inc. 2007. *Fire Protection Services for the City of Lompoc: Planning for the Future.* January 15.

Thomas E. Figg Consulting Services. 2008. *Lompoc Housing Element Fact Sheet*. February.

4.10.5.2 References

City Data: www.city-data.com.

City of Buellton Web site: http://www.cityofbuellton.com/.

City of Lompoc Web site: http://www.cityoflompoc.com/.

Google. 2005. *Google Earth*: http://earth.google.com/.

Santa Barbara County Fire Department Web site: http://www.sbcfire.com/.

Santa Barbara County Parks Department Web site: http://www.sbparks.org/.

Santa Barbara County Planning & Development Department Web site: http://sbcountyplanning.org/.

Santa Barbara County Public Works and Utilities Web site: http://www.countyofsb.org/pwd/pwrrwm.aspx?id=3232.

Santa Barbara County Public Works Water Agency Web site: http://www.countyofsb.org/pwd/pwwater.aspx?id=3726.

Santa Barbara County Sheriff's Department Web site: http://www.sbsheriff.org/.

U.S. Census Bureau Web site: http://quickfacts.census.gov/qfd/states/06/06083.html.

4.11 Traffic and Transportation

4.11.1 Introduction

This section describes existing conditions, potential Project-related impacts, and mitigation measures for transportation and circulation issues in the Project area. The Project will not conflict with any adopted transportation policies. Although existing traffic conditions will be temporarily affected by Project construction, the Project has been designed to ensure that all impacts will be less than significant.

The CEQA Checklist used to determine the significance of impacts is provided below.

XV. TRAFFIC AND TRANSPORTATION -- Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity (v/c) ratio on roads, or congestion at intersections)?	❐	❐	☒	❐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	❐	❐	❐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	❐	❐	☒	❐
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	❐	❐	☒	❐
e) Result in inadequate emergency access?	❐	❐	☒	❐
f) Result in inadequate parking capacity?	❐	❐	❐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	❐	❐	❐	☒

There are no temporary or permanent impacts anticipated with operation and maintenance of the power line.

4.11.2 Methodology

Traffic data and other transportation system information were obtained from maps, literature searches, aerial photos, and personal communications with state and local government personnel (see Section 4.11.5, Works Cited). The information was then used to evaluate the Project against the CEQA Checklist to determine potential impacts.

4.11.3 Existing Conditions

4.11.3.1 Regulatory Background

The CPUC has primary jurisdiction over the Project by virtue of its approval authority over construction, operation, and maintenance of public utility facilities. Because local governments do not have discretionary authority over utility projects, such projects are exempt from local land use and zoning regulations and permitting. As part of the CEQA impact analysis, PG&E considered local circulation elements as well as traffic and transportation policies and local issues.

Federal

U.S. Department of Transportation (USDOT) and the California Department of Transportation (Caltrans) are the administrating agencies for the following regulations:

- Title 49 Code of Federal Regulations Sections 171 through 177 (49 CFR 171-177) governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399 and Appendixes A through G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs USDOT to establish criteria and regulations for the safe transportation of hazardous materials.

USDOT and Federal Aviation Administration (FAA) are the administrating agency for the following regulations:

- 14 CFR 77.13(2)(i) requires an applicant to notify the FAA of the construction of structures within 20,000 feet of the nearest point of the nearest runway of an airport with at least one runway longer than 3,200 feet. No airports are within 20,000 feet of the proposed Project site; therefore, this requirement is not applicable.
- 14 CFR 77.17 requires an applicant to submit a Notice of Proposed Construction or Alteration (FAA Form No. 7460-1) to the FAA for construction within 20,000 feet of the nearest runway of an airport with at least one runway longer than 3,200 feet. 14 CFR 77.21, 77.23, and 77.25 outlines the criteria used by the FAA to determine whether an obstruction would create an air navigation conflict. Because of the distance from the proposed Project is more than 3 nautical miles from the nearest airport, these requirements are not applicable.

State

Caltrans owns the ROW for US 101, SR 1 and SR 246, including the on- and off-ramps that provide access to the Project area. If any work within the ROW is necessary for the Project, then an Encroachment Permit from Caltrans will be required.

Caltrans is the administrating agency for the following regulations:

- California Vehicle Code (CVC) Sections 13369, 15275, and 15278 address the licensing of drivers and classifications of licenses required to operate particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are addressed.

- CVC Sections 25160 et seq. address the safe transport of hazardous materials.
- CVC Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol to transport hazardous materials, including explosives.
- CVC Sections 31300 et seq. regulate the highway transportation of hazardous materials, routes used, and restrictions. CVC Section 31303 requires hazardous materials to be transported on state or interstate highways that offer the shortest overall transit time possible.
- CVC Sections 31600-31620 regulate the transportation of explosive materials.
- CVC Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- CVC Sections 32100-32109 establish special requirements for the transportation of substances presenting inhalation hazards and poisonous gases. CVC Section 32105 requires shippers of inhalation or explosive materials to contact the California Highway Patrol and apply for a Hazardous Material Transportation License. Upon receiving this license, the shipper will obtain a handbook specifying approved routes.
- CVC Sections 34000-34121 establish special requirements for transporting flammable and combustible liquids over public roads and highways.
- CVC Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5, and 34510-11 regulate the safe operation of vehicles, including those used to transport hazardous materials.
- California Street and Highways Code (S&HC) Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 regulate ROW encroachment and granting of permits for encroachments on state and county roads.
- S&HC Sections 117 and 660-711 and CVC Sections 35780 et seq. require permits to transport oversized loads on county roads. California S&HC Sections 117 and 660 to 711 requires permits for any construction, maintenance, or repair involving encroachment on state highway ROWs. CVC Section 35780 requires approval for a permit to transport oversized or excessive loads over state highways.
- Caltrans weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in the CVC Sections 35550 to 35559. The following provisions from the CVC apply to all roadways and are therefore applicable to this Project:

  General Provisions:

  – The gross weight imposed upon the highway by the wheels on any axle of a vehicle shall not exceed 20,000 pounds, and the gross weight upon any one wheel or wheels supporting one end of an axle and resting upon the roadway shall not exceed 10,500 pounds.

- The maximum wheel load is the lesser of the following: (1) the load limit established by the tire manufacturer, or (2) a load of 620 pounds per lateral inch of tire width, as determined by the manufacturer's rated tire width.

Vehicles with Trailers or Semitrailers:

- The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 18,000 pounds, and the gross weight upon any one wheel or wheels supporting one end of an axle and resting upon the roadway shall not exceed 9,500 pounds, except that the gross weight imposed upon the highway by the wheels on any front steering axle of a motor vehicle shall not exceed 12,500 pounds.

- California State Planning Law, Government Code Section 65302 requires each city and county to adopt a General Plan, consisting of seven mandatory elements, to guide its physical development. Section 65302(b) requires that a circulation element be one of the mandatory elements.
- All construction in the public ROW must comply with the *Manual of Traffic Control Devices* (Caltrans and Federal Highway Administration, 2003).

Local

Santa Barbara County. The Circulation Element of the Santa Barbara County Comprehensive Plan identifies key roadway links throughout the unincorporated areas of the County and guides decisions regarding new development.

The Santa Barbara County Association of Governments (SBCAG) has developed a set of traffic impact thresholds to assess the impacts of land use decisions made by local jurisdictions on regional transportation facilities located within the Congestion Management Program (CMP) roadway system.

SBCAG has been designated as the Congestion Management Agency for the County and is therefore responsible for administration of the CMP. The CMP establishes a minimum level of service along roadways and intersections that are included in the CMP network.

City of Lompoc. The City of Lompoc (the City) is currently updating its 1997 General Plan (City of Lompoc, 1997). The 1997 Circulation Element roadway classes include expressway, major arterial, minor arterial, collector, and local road. Arterial roads are major thoroughfares used primarily for through traffic and access to commercial uses via limited access connections. Collector roads collect traffic from the local roads and serve as connectors between arterials and local roads. Local roads provide access to individual properties. Encroachment permits from the City are required for any improvements to the roadways in the City's ROW, or any other work within the ROW. The City reviews the haul route/Traffic Management Plan (TMP) and must permit heavy or oversized loads before they can legally travel on City streets. The City's traffic study guideline requires a traffic study when there is the potential for the project to create a significant number of traffic conflicts under future conditions (City of Lompoc, 2009a). Typically, the City considers that a project generating more than 50 peak hour trips is generally a potentially significant trip generator. This requirement is consistent with the Environmental Thresholds and Guidelines Manual (Santa Barbara County, 2008).

4.11.3.2 Environmental Setting

The roadway network used for the Project is located throughout western Santa Barbara County. The transportation system comprises an interconnected network of federal, state, city, and county roads.

Regional

The regional transportation system in the vicinity of the Project comprises two regional highways (SR 1 and SR 246) and one freeway (US 101). These roadways will be used for access to the site during construction and operations.

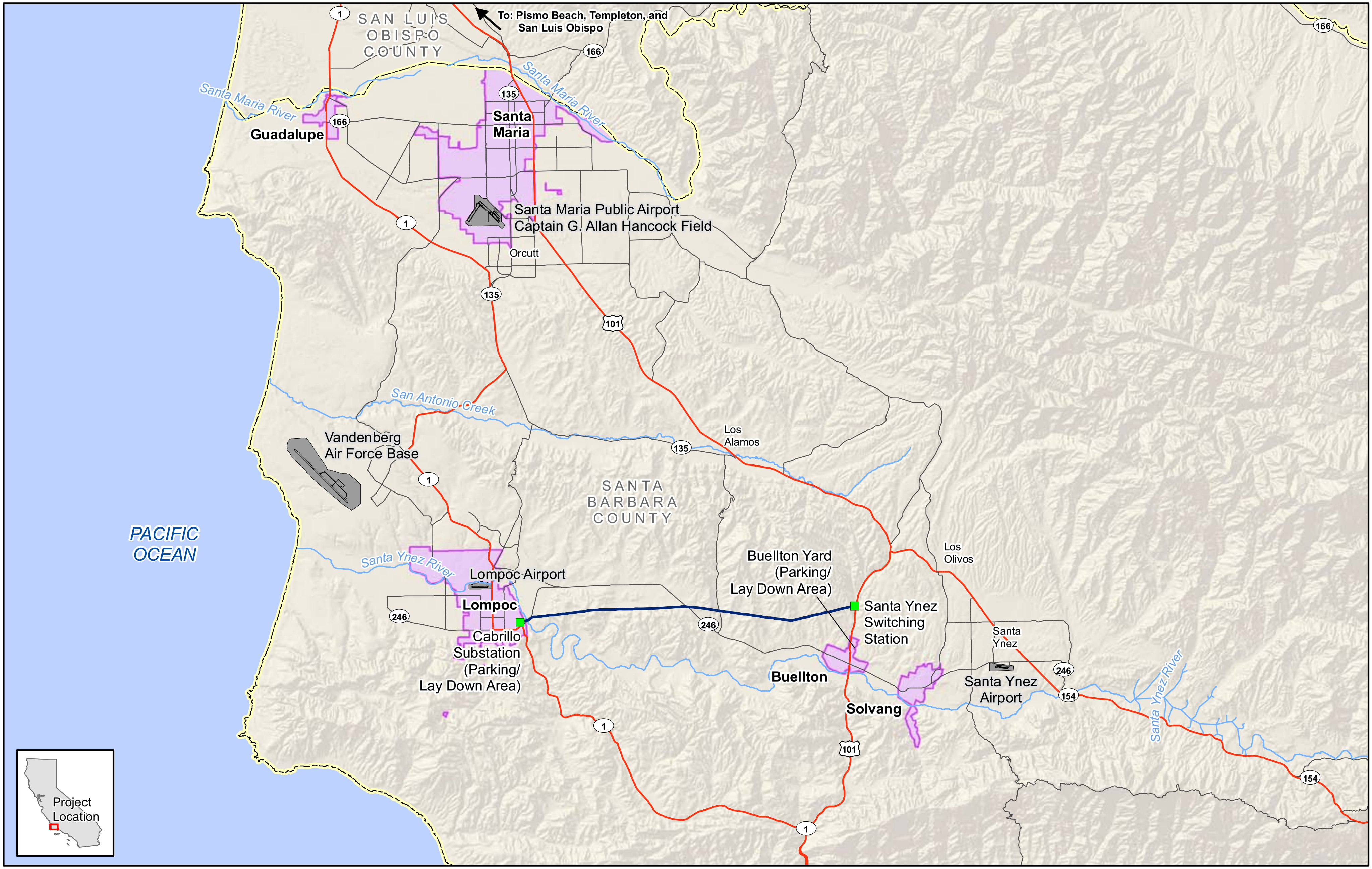
US 101. US 101 serves as one of California's primary western arteries, linking San Francisco to Los Angeles. Access to and from US 101 in the vicinity of the Project site is via the SR 246 interchange and the SR 1 interchange for both northbound and southbound traffic. According to traffic counts conducted by Caltrans in 2007, US 101 carries an average of 20,700 vehicles per day at the SR 246 interchange. Truck traffic accounted for 14.7 percent of total traffic.

State Route 1. SR 1, also known as Cabrillo Highway, splits from US 101 south of Buellton and passes through the coastal cities of Lompoc, Guadalupe, and Grover City before joining US 101 again at Pismo Beach. In the City of Lompoc, SR 1 is Ocean Avenue (between 12th Street and H Street) and H Street (between Ocean Avenue and Purisima Road). According to traffic counts conducted by Caltrans in 2007, SR 1 carries an average of 14,800 vehicles per day near the southern intersection with SR 246. Truck traffic accounted for 11 percent of total traffic.

State Route 135. SR 135, also known as Orcutt Expressway, runs north-south and joins US 101 to SR 1 via Betteravia Road in Santa Maria. According to traffic counts conducted by Caltrans in 2007, SR 135 carries an average of 40,000 vehicles per day near the intersection of Betteravia Road. Truck traffic accounted for 4.5 percent of total traffic.

State Route 246. This two-lane highway runs from Santa Ynez, at State Route 154, to the Pacific Coast. The portion of the route through Lompoc is called Ocean Avenue, and is concurrent with SR 1 between H Street and 12th Street. The portion of the route west of Lompoc is called Buellton Road. According to the traffic counts conducted by Caltrans, SR 246 carries an average of 9,300 vehicles per day at the intersection with SR 1 and 17,300 vehicles at the US 101 interchange. Truck traffic accounted for 3.8 percent and 8.5 percent at the two locations, respectively.

Figure 4.11-1 illustrates the regional location of the site in relation to existing transportation facilities. Table 4.11-1 summarizes the principal characteristics of the facilities above.



Rev. 6: 06/29/2009

FIGURE 4.11-1
Existing Transportation Facilities
Cabrillo - Santa Ynez 115kV Reconductoring Project

0 3 6 Miles

Scale: 1:350,000

TABLE 4.11-1
Summary of Study Area Roadway Characteristics
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Roadway	Jurisdiction	Classification	Lanes	Daily Traffic Volume (Vehicles)	Peak Hour Traffic Volume (Vehicles)	Physical Relationship to Power line
US 101 (At SR 246 Interchange)	Caltrans	Freeway	4	20,700	2,175	Access Road
SR 1 (At SR 246 South Intersection)	Caltrans	Arterial	4	14,800	1,500	Access Road
SR 246 (At SR 1 Intersection)	Caltrans	Arterial	2	9,300	1,000	Access Road
SR 246 (At US 101 Interchange)	Caltrans	Arterial	2	17,300	1,750	Access Road
East Laurel Avenue	City of Lompoc	Local	2	Less than 8,000	Not available	Overhead Crossing
River Park Road	City of Lompoc	Local	2	Not available	Not available	Overhead Crossing
Sweeney Road	Santa Barbara County	Local	2	Not available	Not available	Overhead Crossing/ Potential Access Road
Hapgood Road	Santa Barbara County	Not available	2	Not available	Not available	Potential Access Road
Campbell Road	Santa Barbara County	Not available	2	Not available	Not available	Potential Access Road
Drum Canyon Road	Santa Barbara County	Minor Collector	2	Not available	Not available	Overhead Crossing
Canyata de Laguana	Private	-	2	Not available	Not available	Overhead Crossing
Bobcat Springs Road	Private	-	2	Not available	Not available	Overhead Crossing/ Potential Access Road
Rolling Meadow Lane	Private	-	2	Not available	Not available	Overhead Crossing
Cougar Ridge Road	Private	-	2	Not available	Not available	Overhead Crossing
Bluebird Glen Road	Private	-	2	Not available	Not available	Overhead Crossing
Jonata Park Road	Santa Barbara County	Collector	2	828	Not available	Potential Access Road

Sources:
Traffic volumes on state facilities were obtained from Caltrans (2007). Traffic volumes on City of Lompoc's facilities were provided by the City's traffic engineer. Traffic volumes on Santa Barbara County's facilities were provided by the County's traffic engineer (pers comm. Mark Kitteringham 2009).

Local

The local transportation network for the Project consists of City-maintained roads (East Laurel Avenue and River Park Road), County-maintained roads (Sweeney Road, Hapgood Road, Campbell Road, Drum Canyon Road, and Jonata Park Road), and private roads (Bluebird Glen Road, Bobcat Springs Road, Canyata de Laguana, Cougar Ridge Road, and Rolling Meadow Lane).

Table 4.11-1 summarizes the characteristics of these roadways.

4.11.3.3 Existing Traffic Volumes and Levels of Service

To evaluate the operational characteristics of a roadway segment, a simple grading system is used to compare the traffic volume carried by a road with the capacity of that road. The volume/capacity (V/C) ratio is an indicator of traffic conditions, speeds, and driver maneuverability. Table 4.11-2 presents roadway traffic flow characteristics for different Levels of Service (LOS).

TABLE 4.11-2
Level of Service Criteria for Roadways
Cabrillo – Santa Ynez 115 kV Reconductoring Project

LOS	V/C	Traffic Flow Characteristics
A	0.00 – 0.60	Free flow; insignificant delays
B	0.61 – 0.70	Stable operation; minimal delays
C	0.71 – 0.80	Stable operation; acceptable delays
D	0.81 – 0.90	Approaching unstable flow; queues develop rapidly but no excessive delays
E	0.91 – 1.00	Unstable operation; significant delays
F	> 1.00	Forced flow; jammed conditions

Notes:
LOS = level of service; V/C = volume/capacity ratio
Source: Transportation Research Board. 2000. *Highway Capacity Manual*.

Table 4.11-3 includes a summary of the operational assessment of state facilities. Caltrans considers LOS D or better on state highway segments to be acceptable for planning purposes. US 101 is the only facility operating at an unacceptable LOS between San Luis Obispo and Santa Maria.

The roads listed in Table 4.11-1 as potential access roads will not see a significant increase in their traffic volumes because only one or two trucks will be at a pole location at any given point.

TABLE 4.11-3
Existing Traffic Operations
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Roadway	Segment	Peak Hour Existing Volume (Vehicles)	Peak Hour Design Capacity (Vehicles)	Peak Hour V/C Ratio	LOS[a]
US 101	Between Templeton and San Luis Obispo	5,400	8,000	0.68	B
US 101	Between San Luis Obispo and Pismo Beach	8,200	8,000	1.03	F
US 101	Between Pismo Beach and Santa Maria	9,400	8,000	1.18	F
SR 135	Between Santa Maria and Orcutt	4,000	4,800	0.83	D
US 101	Between Santa Maria and Orcutt	3,900	8,000	0.49	A
SR 1	Between Orcutt and San Antonio Creek Road	1,950	4,800	0.41	A
SR 1	Between San Antonio Creek Road and Lompoc	2,150	4,800	0.45	A
SR 246	Between intersection with SR 1 and Domingus Road	1,000	1,600	0.63	B
SR 246	Between Domingus Road and US 101 interchange	1,750	4,800	0.36	A
US 101	Between SR 246 interchange and Buellton	2,050	8,000	0.26	A

Notes:

LOS = level of service; V/C = volume/capacity.
[a] For LOS code definitions, see Table 4.11-2.
Source: Caltrans (2007 traffic counts).

4.11.3.4 Bicycle Facilities

The 2008 City of Lompoc Bicycle Transportation Plan (City of Lompoc, 2008) describes the bikeways within the City limits. An existing Class II bicycle path is located on Seventh Street, and a Class III Bikeway is located on Laurel Avenue. Class II routes are on-street bike lanes, and Class III routes are shared-use bike routes. The County of Santa Barbara's Bike Map designates SR 246 as an alternate route and McMurray Road as a Class II bike lane (on-street painted bike lane) (Santa Barbara County, 2009). Figure 4.2-5 (in Section 4.2) shows all existing and proposed bikes routes in the vicinity of the Project site.

4.11.3.5 Air Traffic

Vandenberg Air Force Base is located 7.5 miles west of Cabrillo Substation. The Santa Maria gate is 18 miles north of Cabrillo Substation on SR 1. Lompoc Airport is 2.4 miles north of Cabrillo Substation and serves as a general aviation facility in the Lompoc Valley. It has a 4,600-foot runway and averages 83 aircraft operations per day as of October 2007 (AirVan.com, 2009). Santa Ynez Airport is about 20.4 miles east of Cabrillo Substation and will be used for the Project's helicopter overnight area if needed. It has a 2,804-foot runway and averages 83 aircraft operations per day as of July 2007.

A Lift Plan will be prepared and approved by the FAA prior to construction helicopter operations involving lifting of poles.

4.11.3.6 Transit and Rail Services

The Amtrak's "Pacific Surfliner" offers train service between Santa Barbara and San Luis Obispo, with stops in Santa Maria and Surf/Lompoc. The "Coastal Starlight" route links San Luis Obispo to Santa Barbara (Amtrak, 2009).

The Breeze Bus uses a portion of SR 1 to link Santa Maria to Lompoc. Lompoc's Transit Center is located at Central Avenue and H Street. One of the Santa Maria stops is located at Betteravia Road and Miller Street (Breeze Bus, 2009).

The Clean Air Express links Lompoc to Goleta, Lompoc to Santa Barbara, Santa Maria to Goleta, and Santa Maria to Santa Barbara. The Santa Maria stop is located at 3455 Skyway Drive, and the Lompoc stop is located between I and J Streets (Clean Air Express, 2009).

"Colt" is the city of Lompoc's bus system, which has six routes. Within the City limits, two routes use H Street (City of Lompoc, 2009b).

The Regional Transit Authority–South County Area Transit (RTA-SCAT) mainly operates in San Luis Obispo and offers a connection to Santa Maria that uses partially US 101 (RTA-SCAT, 2009).

"SMAT" is the City of Santa Maria's bus system, which has 12 routes. Four lines use South Broadway, and one line uses Betteravia Road near US 101 (City of Santa Maria, 2009).

4.11.4 Potential Impacts and Mitigation

The following section describes significance criteria for traffic and transportation impacts that were derived from the CEQA Checklist, APMs, and potential Project-related construction and operational impacts.

4.11.4.1 Significance Criteria

Significance criteria for transportation and circulation were derived from the CEQA Checklist. The magnitude of a potential impact was compared to the *Environmental Thresholds and Guidelines* (Santa Barbara County, 2008) and the SBCAG thresholds (SBCAG, 2003). The applicable criteria are listed below followed by a discussion regarding the Project's conformance with the criteria.

Would the Project:

XV.a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity (v/c) ratio on roads, or congestion at intersections)? With implementation of APM TT-1, potential impacts will be less than significant.

Potential Impact Traffic and Transportation (TT)-1 (see Section 4.11.4.3, Construction/Temporary Construction Impacts) addresses traffic load and capacity. Potential short-term impacts associated with traffic issues will be less than significant with implementation of applicant proposed measure APM TT-1 (see Section 4.11.4.2 below).

XV.b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? With implementation of APM TT-1, potential impacts will be less than significant.

Potential Impact TT-1 also addresses level of service standard in Section 4.11.4.3, Construction/Temporary Construction Impacts. Potential short-term impacts associated with traffic issues will be less than significant with implementation of APM TT-1.

XV.c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? With implementation of APM TT-2, potential impacts will be less than significant.

The alteration of air traffic patterns by helicopter use is discussed in Section 4.11.4.3, Construction/Temporary Construction Impacts. The impact will be less than significant with implementation of APM TT-2.

XV.d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)? With implementation of APM TT-1, potential impacts will be less than significant.

Potential Impact TT-3 addresses potentially incompatible uses in Section 4.11.4.3, Construction/Temporary Construction Impacts. With implementation of APM TT-1, the potential short-term impacts would be minor and less than significant.

XV.e) Result in inadequate emergency access? With implementation of APM TT-1, potential impacts will be less than significant.

Proposed Project activities that may result in a minor temporary access restriction to emergency response vehicles will be less than significant with implementation of APM TT-1.

XV.f) Result in inadequate parking capacity? No impact will result; no mitigation is needed.

As needed, all personal worker vehicles will be parked in the PG&E yards in as discussed in Section 4.11.4.3, Construction/Project Trip Generation. No impact will result.

XV.g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? No impact will result; no mitigation is needed.

The Project would not conflict with plans or policies supporting alternative transportation. No impact will result.

Santa Barbara County Environmental Thresholds and Guidelines

The *Environmental Thresholds and Guidelines Manual* (Santa Barbara County, 2008) provides threshold criteria to determine significant adverse impacts. The guidelines mainly focus on intersection operations but also specify, as a general rule, if trip generation during the peak hour is expected to exceed 50 vehicles, a traffic study will be required.

Santa Barbara County Association of Governments

SBCAG has developed a set of traffic impact thresholds to assess the impacts of land use decisions made by local jurisdictions on regional transportation facilities located within the CMP roadway system. These guidelines are used to determine the significance of Project-generated traffic impacts on the regional CMP system. The minimum roadway level of service is LOS D, or the existing LOS of the facility, whichever is worse. For freeway of highway segments with existing congestion, the maximum number of added peak trips shall not exceed 100 peak trips, if the roadway operates at LOS D, and 50 peak trips, if the roadway operates at LOS E or LOS F.

4.11.4.2 Applicant Proposed Measures

PG&E will implement the following APMs to minimize impacts to traffic and circulation.

APM TT-1: Traffic Management Plan development and implementation. PG&E will follow its standard safety practices, including installing appropriate barriers between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. PG&E is a member of the California Joint Utility Traffic Control Committee, which published the Work Area Protection and Traffic Control Manual. PG&E will follow the recommendations in this manual regarding basic standards for the safe movement of traffic on highways and streets in accordance with Section 21400 of the CVC. The establishment of a Traffic Management Plan (TMP) will address haul routes, timing of heavy equipment and building material deliveries, potential street and/or lane closures, signing, lighting, and traffic control device placement. Notification to the public of temporary road closures will be provided as prescribed by a Santa Barbara County Road Closure and/or encroachment permit. In particular, all construction activities shall be coordinated with local law enforcement and fire protection agencies. Emergency service providers will be notified of the timing, location, and duration of construction activities.

APM TT-2: Lift Plan development and implementation. A Lift Plan will be prepared and approved by the FAA prior to all construction helicopter operations. PG&E does not anticipate that residents will be required to temporarily vacate their homes. In the unlikely event that final construction plans and the Lift Plan require otherwise, PG&E will coordinate with potentially affected residents (providing a minimum of 30 days notice) to minimize the duration of the necessary work and any resultant inconvenience. The implementation of this measure will minimize impact TT-2 to a less than significant level.

4.11.4.3 Construction

Project Trip Generation

At peak operation, it is estimated that a maximum of 10 crews will be working a 10-hour shift during the pole removal/installation and line reconductoring activities. The crews will typically carpool in two trucks per crew from their normal work yards to the Project laydown areas. The trucks will transport both the crews and the materials needed to perform the work. Trucks that were initially used to deliver the material prior to the start of construction or to perform other activities prior to or following the line reconductoring activities were not considered in the Project trip generation, as these trucks were less numerous than the number of trucks needed during the major line reconductoring activities and typically use the same routes.

Truck trips were converted to passenger-car equivalent trips using a passenger-car equivalent factor of 2.5. The *Highway Capacity Manual* (Transportation Research Board, 2000) uses a general factor of 1.5 for trucks. On large grades, higher truck equivalent factors are used but generally do not exceed three, except in mountainous areas. To account for larger trucks and some grades, the 2.5 factor was used as a conservative estimate. This will account for the fact that long trucks take up more physical space and generally operate at lower speeds than passenger vehicles.

Project Trip Distribution

Two crews are anticipated to come from each of the five work yards in Templeton, San Luis Obispo, Pismo Beach, Santa Maria and Buellton: crews originating from Buellton (i.e., 4 trucks) will use US 101 northbound to park at the Buellton Service Center. Crews originating north of the Project site (i.e., 16 trucks) are expected to use US 101 southbound to the Project site; at Santa Maria, 6 trucks will typically continue on US 101 to the Los Padres Service Center, while 10 trucks will typically use SR 1 via SR 135 to Cabrillo Substation. After loading any materials needed for construction, the trucks will use local roads to reach PG&E's access roads; where access to a pole by road is not feasible, a helicopter will be used.

Temporary Construction Impacts

Potential Impact TT-1: Cause an increase in traffic or exceed level of service standards. Potential short-term impacts associated with traffic issues will be minimized to a less than significant level through implementation of APM TT-1. Short-term traffic impacts were assessed by adding the anticipated Project-related construction traffic to the existing traffic on selected state roadway facilities. Table 4.11-4 provides a summary of the results of this comparison.

TABLE 4.11-4
Existing And Project Traffic Operations
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Roadway	Segment	Peak Hour Existing Volume (Vehicles)	Construction Traffic Added	Existing Peak Hour V/C Ratio	Construction Peak Hour V/C Ratio	LOS[a]
US 101	Between Templeton and San Luis Obispo	5,400	4 x 2.5	0.68	0.68	B
US 101	Between San Luis Obispo and Pismo Beach	8,200	8 x 2.5	1.03	1.03	F
US 101	Between Pismo Beach and Santa Maria	9,400	12 x 2.5	1.18	1.18	F
SR 135	Between Santa Maria and Orcutt	4,000	10 x 2.5	0.83	0.84	D
US 101	Between Santa Maria and Orcutt	3,900	6 x 2.5	0.49	0.49	A
SR 1	Between Orcutt and San Antonio Creek Road	1,950	10 x 2.5	0.41	0.41	A
SR 1	Between San Antonio Creek Road and Lompoc	2,150	10 x 2.5	0.45	0.45	A
SR 246	Between Junction with SR 1 and Domingus Road	1,000	10 x 2.5	0.63	0.64	B
SR 246	Between Domingus Road and Junction with Route 101	1,750	10 x 2.5	0.36	0.37	A

TABLE 4.11-4
Existing And Project Traffic Operations
Cabrillo – Santa Ynez 115 kV Reconductoring Project

Roadway	Segment	Peak Hour Existing Volume (Vehicles)	Construction Traffic Added	Existing Peak Hour V/C Ratio	Construction Peak Hour V/C Ratio	LOS[a]
US 101	Between Junction with SR 246 and Buellton	2,050	4 x 2.5	0.26	0.26	A

Notes:
A PCE factor of 2.5 is applied to the number of truck trips.
LOS = level of service; V/C = volume/capacity.
[a] For LOS code definitions, see Table 4.11-2.

Service levels of roadways potentially affected by Project traffic change little, if at all, from those experienced under existing conditions. Additionally, the maximum number of trips generated is below County significance criteria on County-maintained roadways. Therefore, a less than significant impact is anticipated with respect to the capacity of the street systems portion of this criterion.

Temporary road closures (rolling stops) are anticipated when certain sections of the line are being reconductored over the road. Road closures on any private and County roads are not expected to exceed 5 minutes in duration. For SR 246 crossings, the California Highway Patrol and Caltrans will be contacted to organize 5-minute rolling stops. There may also be a need for highway, roadway, and trail closures due to construction helicopter operations. Any necessary encroachment permits will be obtained from the affected agencies.

Potential short-term impacts associated with these traffic issues will be less than significant with implementation of APM TT-1 (discussed in Section 4.11.4.2).

Potential Impact TT-2: Alteration of air traffic patterns. The potential impact will be minimized to a less than significant level through implementation of APM TT-2. Four poles sites are proposed to be accessed by helicopter to complete pole installation and removal. The flight paths between the laydown areas for those 4 poles and the pole locations will be described in the lift plan in APM TT-2.

Potential Impact TT-3: Traffic and Pedestrian Safety. The potential impact will be minimized to a less than significant level through implementation of APM TT-1. Long, heavy trucks will be used to deliver up to 36 poles per trip to the Project staging areas during construction. These trucks may not be able to turn at some intersections without special maneuvers and may drive slowly. Development and implementation of the TMP and coordination with the county and cities as discussed in APM TT-1 will ensure that potential impacts are less than significant.

Potential Impact TT-4: Emergency Access. The potential impact is less than significant with implementation of APM TT-1. Routes for emergency vehicles will be maintained throughout Project construction, but construction activities may cause occasional delays for emergency vehicles on roadways in the Project area. The Proposed Project activities could have the potential in unusual circumstances to slow emergency response vehicles such as in a rolling stop or slow-moving pole delivery truck; this minor potential impact will be less than significant with implementation of APM TT-1 (discussed in Section 4.11.4.2).

Potential Impact TT-5: Alternative Transportation Policies, Plans or Programs. This potential impact is a less than significant impact. Both short-term construction impacts and long-term operational impacts are not anticipated to impact any alternative transportation plans, policies, or programs. Construction workers will park at existing maintenance yards and carpool to the Project area.

Permanent Construction Impacts

No permanent construction impacts are expected.

4.11.4.4 Operation and Maintenance

Current operation and maintenance activities will continue as already in effect to ensure proper equipment operation and safety. Reconductoring of the line will improve reliability, thereby resulting in less wire breakage from corrosion and brittleness, which is anticipated to result in fewer events or incidents requiring emergency inspections. No impacts to long-term operation and maintenance activities are anticipated.

4.11.5 Works Cited

AirNav.com. 2009. Lompoc Airport Information. Available online at: http://www.airnav.com/airport/KLPC.

Amtrak. 2009. Route Table. Available online at: http://www.amtrak.com/servlet/ContentServer?pagename=Amtrak/Page/Routes_Index_Page&c=Page&cid=1080072922209&ssid=4.

Breeze Bus. 2009. System Map. Available online at: http://www.breezebus.com/map.php.

California Department of Motor Vehicles. 2007. California Vehicle Code. Available online at: http://www.dmv.ca.gov/pubs/vctop/vc/vc.htm.

California Department of Transportation. 2007. Traffic Volumes on California State Highways. Available online at: http://traffic-counts.dot.ca.gov/.

Caltrans and Federal Highway Administration. 2003. Manual on Uniform Traffic Control Devices.

City of Lompoc. 1997. *City of Lompoc General Plan*. October 27.

__________. 2008. City of Lompoc Bicycle Transportation Plan. Available online at: http://www1.cityoflompoc.com/councilagenda/2008/081104/081104n13a2.pdf.

__________. 2009a. City of Lompoc Traffic Study Guidelines. http://www1.cityoflompoc.com/departments/comdev/pdf/traffic_study_MR.pdf.

__________. 2009b. Colt Transit Service Map. Available online at: http://www.cityoflompoc.com/transit/routes.htm.

City of Santa Maria. 2009. Public Transit Services. Available online at: http://www.ci.santa-maria.ca.us/3075.html.

Clean Air Express. 2009. Bus Stops. Available online at: http://www.cleanairexpress.com/stops.htm.

Kitteringham, Mark. 2009. Personal communication regarding Santa Barbara County Traffic volumes. Traffic Engineer, County of Santa Barbara. Email correspondence March 18, 2009.

Regional Transit Authority (RTA). 2009. RTA-SCAT Bus Routes. Available online at: http://www.slorta.org/schedules.htm

Santa Barbara County. 2008. *Environmental Thresholds and Guidelines Manual*. Revised September 2008. Published October 2008.

__________. 2009. Bike Maps. Available online at: http://www.countyofsb.org/central.aspx?id=530.

Santa Barbara County Association of Governments (SBCAG). 2003. *Santa Barbara County Congestion Management Plan*. Available online at: http://www.sbcag.org/PDFs/publications/2003CMP.pdf.

Transportation Research Board. 2000. *Highway Capacity Manual*.

4.12 Corona and Induced Current Effects

4.12.1 Introduction

This section provides a discussion of corona and induced-current effects associated with the Project. These effects include audible noise; radio, television, and computer-monitor interference; fuel ignition; and interference with cardiac pacemakers.

This document provides some general background information regarding EMF associated with electric utility facilities in Appendix D. However, EMF is not addressed here as an environmental impact under CEQA. The CPUC has repeatedly recognized that EMF is not an environmental impact to be analyzed in the context of CEQA because (1) there is no agreement among scientists that EMF does create a potential health risk, and (2) there are no defined or adopted CEQA standards for defining health risk from EMF.

The Project's conductor replacement on the existing line with larger-diameter conductors will reduce the already low corona produced by the line. The induced current effects will not change since the voltage and current will not change. These effects have been determined to be negligible or non-existent for the proposed Project; therefore, no increase from the existing conditions will occur and mitigation measures are not required.

4.12.1.1 Methodology

Information on corona and induced current effects was complied from published literature. Because these effects are common to all power lines, they are discussed as generally applicable.

4.12.2 Existing Conditions

4.12.2.1 Corona

One of the phenomena associated with all energized electrical devices, especially high-voltage power lines, is corona. The localized electric field near a conductor can be sufficiently concentrated to ionize air close to the conductors, resulting in a partial discharge of electrical energy called a corona discharge or corona. Corona is the physical manifestation of energy loss and can transform discharged energy into very small amounts of sound, radio noise, heat, and chemical reactions with air components. Because power loss is uneconomical and noise is undesirable, corona on power lines has been studied by engineers since the early part of the 20th century. Many excellent references exist on the subject of power-line corona. Consequently, corona is well understood by engineers, and steps to minimize it are major factors in power line design.

The amount of corona produced by a power line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions. Corona typically becomes a design concern for power lines at 345 kV and above and is less noticeable from lines that are operated at lower voltages.

The electric field gradient is greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and, hence, lower corona than smaller conductors, everything else being equal.

Irregularities (such as nicks and scrapes on the conductor surface or sharp edges on suspension hardware) concentrate the electric field at these locations and thus increase the electric field gradient and the resulting corona at these spots. Similarly, foreign objects on the conductor surface, such as dust or insects, can cause irregularities on the surface that are a source for corona.

Corona also increases at higher elevations where the density of the atmosphere is less than at sea level. Audible noise varies with elevation with the relationship of A/300 where A is the elevation of the line above sea level measured in meters (Electric Power Research Institute, 2005). Audible noise at 600 meters elevation would be twice the audible noise at 300 meters, all other things being equal.

Raindrops, snow, fog, hoarfrost, and condensation accumulated on the conductor surface are also sources of surface irregularities that can increase corona. During fair weather, the number of these condensed water droplets or ice crystals is usually small and the corona effect is also small. However, during wet weather, the number of these sources increases (for instance due to rain drops standing on the conductor) and corona effects are therefore greater. During wet or foul weather conditions, the conductor would produce the greatest amount of corona noise. However, during heavy rain, the noise generated by the falling rain drops hitting the ground would typically be greater than the noise generated by corona and thus would mask the audible noise from the power line.

Audible Noise

During corona activity, power lines (primarily those rated at 345 kV and above) can generate a small amount of sound energy. This audible noise can increase during inclement weather conditions, when water drops may collect on the surface of the conductors and increase corona activity so that a crackling or humming sound may be heard near a power line. Power line audible noise is measured in decibels using a special weighting scale, the "A" scale, which responds to different sound characteristics similar to the response of the human ear.

Radio and Television Interference

Overhead power lines do not, as a general rule, interfere with radio or television reception. There are two potential sources for interference: corona and gap discharges. As described above, corona discharges can sometimes generate unwanted electrical signals. Corona-generated electrical noise decreases with distance from a power line and also decreases with higher frequencies.

Gap discharges are different from corona. Gap discharges can develop on power lines at any voltage. They can occur at tiny electrical separations (gaps) that can develop between mechanically connected metal parts. A small electric spark discharges across the gap and can create unwanted electrical noise. The severity of gap-discharge interference depends on the strength and quality of the transmitted radio or television signal, the quality of the radio or television set and antenna system, and the distance between the receiver and power line. The large majority of interference complaints are found to be attributable to sources other than power lines (e.g., poor signal quality, poor antenna, door bells, and appliances such as heating pads, sewing machines, freezers, ignition systems, aquarium thermostats, and fluorescent lights). Gap discharges can occur on broken or poorly-fitting line hardware (e.g., insulators, clamps, or brackets). In addition, tiny electrical arcs can develop on the surface of dirty or contaminated insulators, but this interference source is less significant than gap discharge.

4.12.2.2 Induced Currents

Small electric currents can be induced by electric fields in metallic objects close to power lines. Metallic roofs, vehicles, vineyard trellises, and metal fences are examples of objects that can develop a small electric charge in proximity to high-voltage power lines. Object characteristics, degree of grounding, and electric-field strength affect the amount of induced charge. An electric current can flow when an object has an induced charge and a path to ground is presented. The amount of current flow is determined by the impedance of the object to ground and the voltage induced between the object and ground. The amount of induced current that can flow is important to evaluate because of the potential for nuisance shocks to people and the possibility of other effects, such as fuel ignition.

Fuel Ignition

If a vehicle were to be refueled under a high-voltage power line, a possible safety concern could be the potential for accidental fuel ignition. The source of fuel ignition could be a spark discharge into fuel vapors collected in the filling tube near the top of the gas tank. The spark discharge would be due to current induced in a vehicle (insulated from ground) by the electric field of the power line and discharged to ground through a metallic refueling container held by a well-grounded person. Theoretical calculations show that if a number of unlikely conditions exist simultaneously, a spark could release enough energy to ignite gasoline vapors. This could not occur if a vehicle were simply driven or parked under a power line. Rather, several specific conditions would need to be satisfied: A large gasoline-powered vehicle would have to be parked in an electric field of about 5 kV per meter or greater. A person would have to be refueling the vehicle while standing on damp earth and while the vehicle is on dry asphalt or gravel. The fuel vapors and air would have to mix in an optimum proportion, and finally, the pouring spout would have to be metallic.

Cardiac Pacemakers

One area of concern related to the electric and magnetic fields of power lines has been the possibility of interference with cardiac pacemakers. There are two general types of pacemakers: asynchronous and synchronous. The asynchronous pacemaker pulses at a predetermined rate and is practically immune to interference because it has no sensing circuitry and is not exceptionally complex. The synchronous pacemaker, on the other hand, pulses only when its sensing circuitry determines that pacing is necessary. Newer synchronous pacemakers have been redesigned to revert to asynchronous operation when the sensing circuitry from the heart detects interference. This reduces the concern of improper operation when the pacemaker is in the presence of high magnetic fields.

4.12.2.3 Computer Interference

Personal computer monitors can be susceptible to 60-Hertz magnetic field interference. However, the field strength that is needed to cause interference with a computer monitor is very high and is not usually seen near power lines.

4.12.3 Potential Impacts and Mitigation

Because the Project replaces the existing conductor with a larger-diameter conductor, the only change that will occur from this Project will be a reduction in the already low corona produced by the line. The conductor replacement will result in a reduction of any small amount of audible noise, and radio and TV interference that may be present with the existing line. The induced current effects will not change since the voltage and current will not change. Because corona and induced current effects associated with the proposed Project are currently less than significant and will be further reduced by the Project, no impact is anticipated and mitigation measures are not required.

4.12.3.1 Corona

Corona is usually not a design problem for lines rated at 115 kV or for lines located at low elevations such as the Project location, which is well below 1,000 feet for most of the line. The new conductor (715 Multi-Chip Model All Aluminum Conductor, 0.97 inch diameter) selected to replace the existing conductor (4/0 All Aluminum Conductor, seven strand, 0.52 inch diameter) is also of sufficient diameter to lower the localized electrical stress on the air at the conductor surface and would further reduce already-low conductor surface gradients so that little or no corona activity would exist under most operating conditions. No impact will occur from the reconductoring and pole replacement.

Audible Noise

Audible noise levels on typical 115 kV lines are very low and usually are not noticeable. The audible noise levels for the Project will be particularly low due to the low elevation of the line, replacement of the existing corroded line itself, and the new increased conductor diameter. A slight reduction in audible noise is expected from the reconductoring and pole replacement.

Radio and Television Interference

Corona interference with radio and television reception is usually not a design problem for power lines rated at 115 kV. The radio- and television interference levels for the Project are particularly low due to the low elevation of the line. With replacement of the existing corroded line and the new increased conductor diameter, the potential for interference will be less than the existing conditions. The resulting signal-to-noise ratio will easily meet the reception guidelines of the Federal Communications Commission.

4.12.3.2 Induced Currents

The induced current effects will not change from the existing conditions since the voltage and current will not change. No impact will result and no mitigation is proposed.

4.12.4 Works Cited

Electric Power Research Institute. 2005. *EPRI AC Transmission Line Reference Book – 200 kV and Above*. 3rd Edition.

5.0 Growth-inducing and Cumulative Impacts

5.1 Introduction

This section discusses potential growth-inducing and cumulative impacts related to the Cabrillo - Santa Ynez 115 kV Reconductoring Project. CEQA requires a discussion of the ways in which a Project could foster economic or population growth, either directly or indirectly, in the surrounding environment, including projects that remove barriers to population growth. CEQA also requires a discussion of the cumulative effects of a Project. Cumulative impacts refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. A cumulative impact is the change in the environment that results from the incremental impact of a Project when added to other closely related past, present, or reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant impacts occurring over time.

5.2 Growth-inducing Impacts

The following criteria from the CEQA Checklist are used to evaluate whether the project will result in potential individual or cumulative growth-inducing impacts:

- Could the project, either directly or indirectly, foster economic or population growth?
- Could the project remove obstacles to growth in the area?
- Would the project provide new employment?
- Would the project provide access to previously inaccessible areas or extend public services to previously unserved areas?
- Would the project tax existing community services?
- Would the project cause development elsewhere?

A discussion of the Project's potential growth-inducing impacts is provided below.

The Project will result in reconductoring the main portion of the existing power line and replacing 128 poles. The reconductoring effort is necessary to improve existing service and reliability to customers within PG&E's service area in accordance with existing and projected area needs. It will not extend the new power line or other infrastructure into areas not already served. Overland access may be necessary to access some of the poles, but the access routes are part of PG&E's existing access rights and, in any case, would not create new, permanent accessways. Construction would take approximately 16 months and would require a small number of workers. The majority of construction workers are expected to come from the local area or to commute from the neighboring cities. Because the construction duration is short and the local workforce is anticipated to be sufficient, any changes to economic and population growth would be less than significant. As discussed in Section 4.10, existing community services are sufficient to serve the Project for both the short and long term. New development would not be generated by the reconductoring activity. There are no Project-related and cumulative or growth-inducing impacts expected.

5.3 Cumulative Impacts

This section describes the projects included in the cumulative scenario and the potentially cumulative impacts of those projects in combination with the Project for each resource area.

5.3.1 Methodology

Projects included in the cumulative impact analysis were identified by the County of Santa Barbara and the City of Lompoc using a list approach (CEQA Guidelines Section 15130[b][1][A]). These are projects that could result in impacts to the same resources as the Project, in the same geographic areas, and/or during the same timeframe. Individual projects were evaluated for cumulative impacts in combination with the impacts of the Project.

5.3.2 Projects Considered in the Cumulative Impact Analysis

A list of development projects, included in Appendix E, in the vicinity of the Project area, including Lompoc, Buellton, and unincorporated Santa Barbara County, was reviewed to identify whether the proposed Project could contribute to cumulatively significant impacts when taken with these other projects. The majority of the pending or recently constructed projects are occurring in northern or western Lompoc at least 1 mile or more from Cabrillo Substation in Lompoc. There is very little development occurring outside of the Lompoc area and the City of Buellton along the mid-portion of the power line alignment. Because of this fact and the minimal nature of Project-related impacts, the proposed Project would not constitute a considerable contribution to cumulative impacts.

5.3.3 Significance Criteria

Consistent with the revised CEQA Guidelines (Section 15130), a project could have a significant cumulative impact if a change in the environment resulted from the incremental impact of the proposed project when added to other closely related past, present, and probable future projects. Cumulative impacts can result from individually minor but collectively significant projects occurring over a period of time.

5.3.4 Analysis of Cumulative Impacts

Reconductoring projects generally do not contribute to a cumulatively considerable impact. The intent of a reconductoring project is to improve service and reliability on an existing power line, not to expand service territory or facilities, and long-term effects are not expected or would be minor. With appropriate measures, short-term construction-related activities potentially generating noise, traffic, and dust are minimized to less than significant levels. A discussion regarding each resource area is provided below.

5.3.4.1 Aesthetics

Both short-term construction and operational impacts will not create glare or contribute to new nighttime lighting. The power line is visible from designated scenic highways; however, the power line will be no more visible that what is currently there. There are no other power line projects proposed and no other pending projects in the rural area that would cumulatively contribute to aesthetic impacts.

5.3.4.2 Agriculture, Land Use, Recreation, and Planning

The Project falls within an existing utility corridor, and expansion of right-of-way easements will not be required to reconductor the power line. Temporary construction activities could affect agricultural land, after which, the lands would be returned to their former use. No land currently used for agricultural purposes would be permanently removed from agricultural use. The amount of affected land is considered less than significant in relation to the available farmland in the Project area. In the operational and maintenance phase, the proposed Project would not violate existing agricultural zoning and would not induce conversion of agricultural land to urban development. There are no short- or long-term recreational impacts; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.3 Air Quality

Short-term dust generation from the Project and from other construction projects in the Lompoc Valley area could potentially result in short-term construction-related air quality impacts. With implementation of APMs, Project-related impacts will be less than significant. There are no operational impacts associated with the Project, as operation and maintenance activities are minor and typically include one or two PG&E staff driving a pickup truck to inspect the line. This is the same as current operation and maintenance practices; therefore, no contribution to cumulative impacts would occur.

5.3.4.4 Biological Resources

The Project may result in short-term construction impacts to upland habitat of California tiger salamander, California red-legged frog, southwestern pond turtle and western spadefoot toad. With implementation of APMs identified in Section 4.4 for these species, impacts would be less than significant and not contribute appreciable to any cumulative loss of species habitat. The Caltrans SR 246 improvements at the intersection with the Project alignment in may impact a small area of upland habitat where the route is proposed to be widened with the addition of two passing lanes. Taken together, the overall short-term impacts to critical habitat would still be less than significant. There are no other known similar projects proposed in the area that could impact biological resources. Operation and maintenance of the reconductored power line would include routine inspection along existing access roads, consistent with current practices. There is very little activity of any type, aside from grazing, occurring along the power alignment; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.5 Cultural Resources

Neither short-term construction nor operation and maintenance activities will affect any known cultural resources. Project APMs will require that work stop and be redirected in the event any previously unidentified cultural resources are discovered. Because no cultural resources will be affected, no contribution to cumulative impacts would occur.

5.3.4.6 Geology, Soils, and Minerals

As discussed in Air Quality, short-term construction impacts to soils may occur; however, appropriate dust control measures have been incorporated to minimize impacts. Although Lompoc is experiencing many residential projects, the power line is too far away from the construction sites to contribute to cumulative impacts to soils. There are no short-term or operational impacts anticipated to geology and minerals; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.7 Hazards and Hazardous Materials

The Project alignment falls within an existing utility corridor, and expansion of right-of-way easements will not be required to successfully reconductor the power line. There are no long-term significant impacts due to the use of existing easements and compliance with applicable hazards plans, policies, and regulations. Hazardous materials are also stored and used in compliance with applicable regulations, and there will be no increase in usage resulting from the Project. There are no other known similar projects that, taken with the proposed Project, could cumulatively cause hazard or hazardous material impacts; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.8 Hydrology and Water Quality

Potential temporary impacts during construction include erosion, increased runoff and sedimentation, and release of hazardous materials from construction equipment and vehicles. These temporary impacts will be less than significant with implementation of the APMs. Operational impacts would not affect hydrology and water quality, as all activities would be conducted from existing paved or graded areas and would not intensify beyond current activities. No other projects are proposed for the drainages/waterways that could be affected by the Project construction; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.9 Noise

Short-term noise impacts from the Project due to helicopter use will be less than significant with implementation of APMs, including hours of helicopter operation. No other projects are proposed in the vicinity that could contribute to short-term cumulative noise impacts. Especially given the remote location of the Project site, minor operational noise impacts would not be expected to contribute to cumulative noise impacts; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.10 Population and Utilities

Short-term construction and operational activities will not induce growth or increase demand on existing utilities. There are no other similar projects occurring in the area and although Lompoc is experiencing active construction, the power line is distant from this development; therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.11 Transportation and Traffic

Construction and operation of the Project will not result in any significant transportation or traffic impacts. Except for Cabrillo Substation and Santa Ynez Switching Yard, all construction and operational activities occur in rural open-space areas where no traffic congestion exists. Given the location of the Project site in relationship to other pending projects within the Lompoc Valley, the transportation network is sufficient to distribute construction traffic to avoid significant impacts any one given area. Maintenance crew traffic would be reduced because of the added efficiency of the reconductored line. Regardless, maintenance traffic is minimal (one to two times per year with one pickup truck); therefore, the Project would not constitute a considerable contribution to cumulative impacts.

5.3.4.12 Corona and Induced Effects

Corona and induced effects are localized to the Project and will not increase during construction or operation. There are no other power lines or similar devices in the immediate Project area; therefore, the Project would not constitute a considerable contribution to cumulative impacts.